cristie software

TBMR

Bare Machine Recovery for TSM

User Guide

For Windows

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1 Restoring your System

This section discusses the steps required to run a recover sequence using the TBMR Recovery Console. The console is booted from the media created by CRISP in conjunction with the CRISP WinPE2 and WinPE4 Filesets for TBMR 7.1.3.

The WinPE 2 or WinPE 4 based recovery environment is booted on the ***target*** system. This could be the original or a dissimilar system.

A typical TBMR recovery sequence consists of the following steps.

1. *Install and run the **Cristie Recovery ISO Producer** (**CRISP**) tool on a suitable system to create the TBMR WinPE 2 or WinPE 4 based recovery environment. This only needs to be done once.*
2. *Boot the TBMR WinPE 2 or WinPE 4 recovery environment on the **target** system.*
3. *Run a restore sequence from the recovery environment on the **target** system using the TSM backup.*
4. *When the restore operation is complete and, before booting the system, you may change the hostname and IP address as required. If the target system uses different hardware from the source system inject additional drivers into the system using the hardware wizard tool. This tool will detect any new devices in the target system and prompt for the drivers.*
5. *Boot the recovered system.*

In This Section

1.1 Booting the WinPE 2 or WinPE 4 DR Console from CD

Insert the bootable TBMR WinPE 2 or WinPE 4 DR CD/DVD-ROM and reboot the machine. You will be prompted to **Press any key to boot from the CD or DVD**.

This prompt is only made for a few seconds before the system will attempt to boot the underlying OS, so you will need to react quickly.

To support devices (for example a new mass storage controller) not supported in the current DR environment, WinPE 2 or WinPE 4 allows drivers for any device to be injected at any time *post boot*. Refer to the section titled Load a Driver for information on how to do this. Ensure you add the correct driver version; 32-bit for WinPE2 and 64-bit for WinPE4).

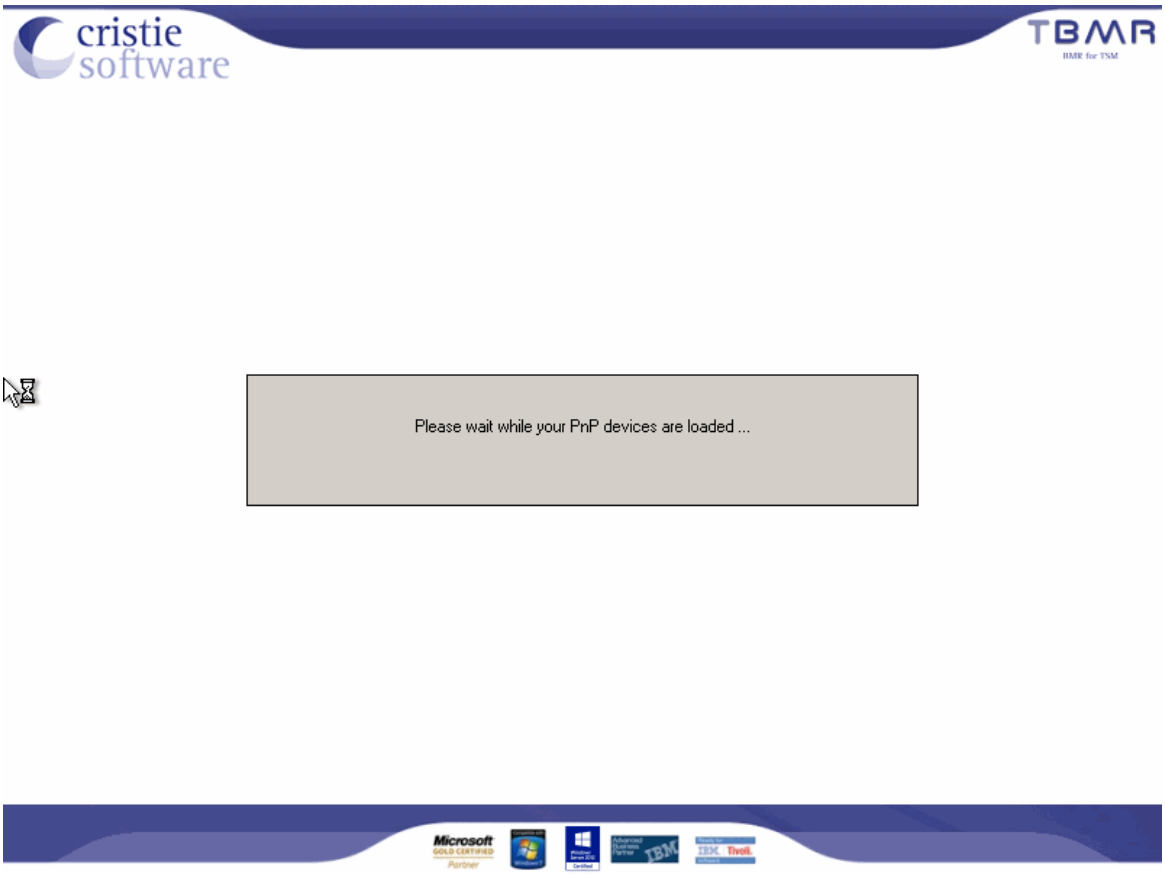
1.2 WinPE 2 or WinPE 4 Based TBMR Recovery Console

When the **WinPE 2 or WinPE 4 TBMR Console** is booted, a Windows installation-like boot procedure is started.

During the boot process, WinPE 2 or WinPE 4 drivers for your **Plug and Play** devices will be loaded - in particular the **Mass Storage** devices and **Network Adapters**.

When the WinPE 2 or WinPE 4 system has fully booted, it is possible to remove the CD/DVD if you wish.

Note: the DR Console will automatically reboot 72 hours after starting. This is an operating limitation of the Microsoft Windows WinPE 2 or WinPE 4 environment.



When this sequence completes, the **TBMR Recovery Console** will be shown.

In This Section

TBMR Recovery Console Main Menu
Start Automatic Recovery Wizard
Start Manual Recovery Sequence
Tools
Show Log and Error Reports
Copy Log and Error Report Files
Close Recovery Console and Reboot

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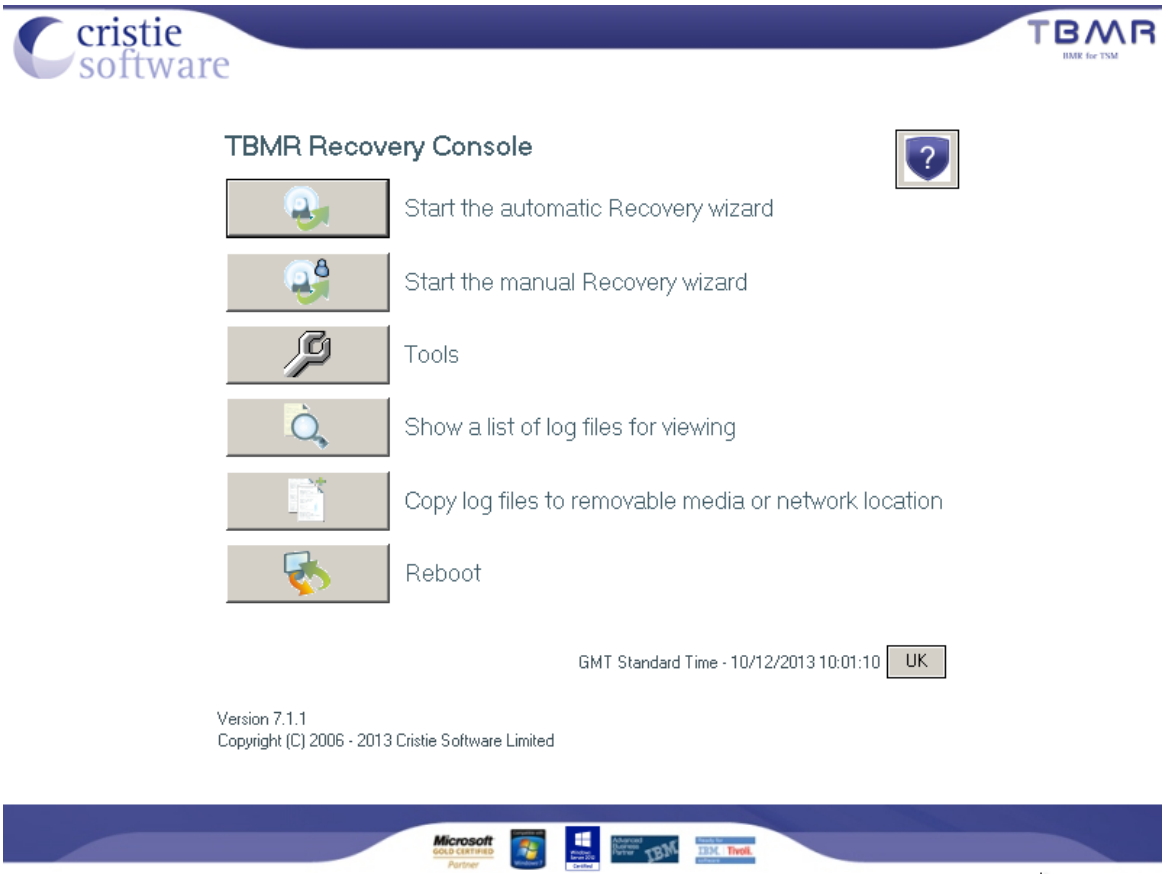
1.2.1 TBMR Recovery Console Main Menu

When you boot the **WinPE 2 or WinPE 4** DR environment (the WinPE2 and WinPE4 versions are very similar), you will see the **TBMR Recovery Console** Main Menu as below:


cristie software
TBMR
TBMR Recovery Console
Start the automatic Recovery wizard
Start the manual Recovery wizard
Tools
Show a list of log files for viewing
Copy log files to removable media or network location
Reboot
GMT Standard Time - 10/12/2013 10:01:10
UK
Version 7.1.1
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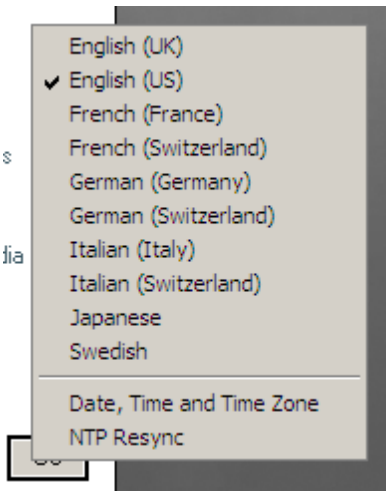
You may configure the format of the displayed date/time and the keyboard layout, by pressing the locale

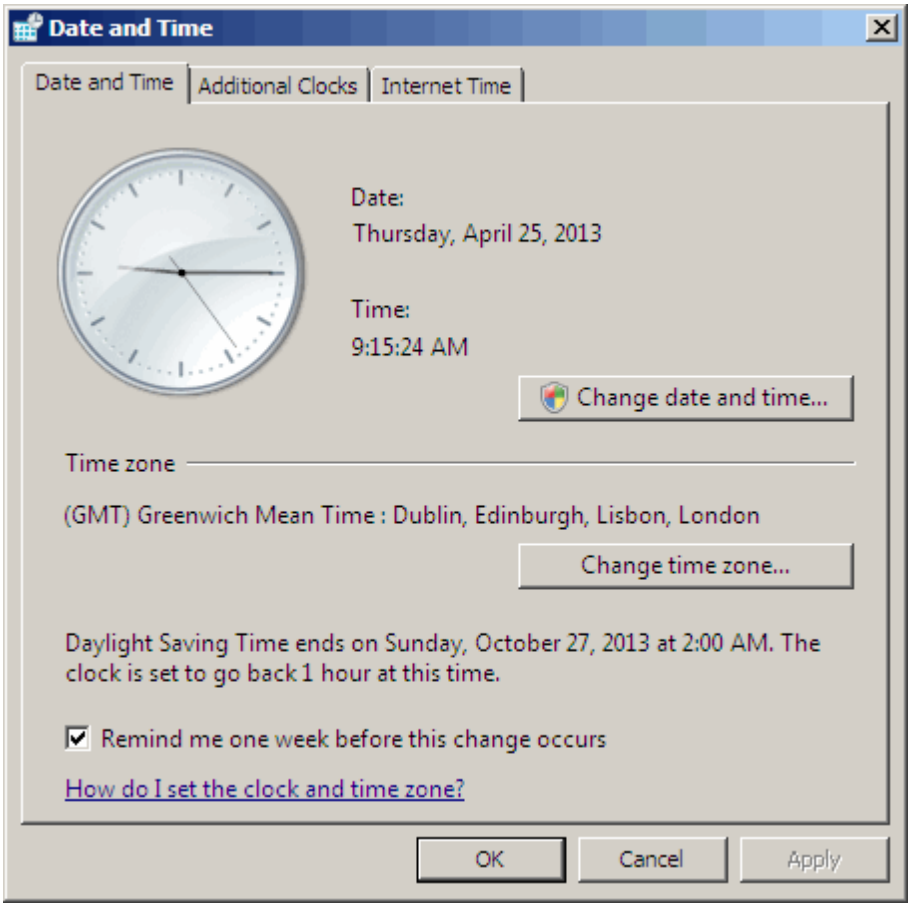
icon. Note this icon will be shown according to the locale of the host system used to create the ISO using the CRISP utility so it may not match the version shown here. So if, for example, the ISO was built on a machine configured with a UK locale it will be displayed as

.



By default the standard display uses a keyboard layout to match the default locale as discussed above. However, this may be changed to one of the listed alternatives. Note that this does not change the display language which is always English.

Select **Date, Time and Time Zone** to configure the time zone for the recovery.


Date and Time
Date and Time
Additional Clocks
Internet Time
Date:
Thursday, April 25, 2013
Time:
9:15:24 AM
Change date and time...
Time zone
(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
Change time zone...
Daylight Saving Time ends on Sunday, October 27, 2013 at 2:00 AM. The clock is set to go back 1 hour at this time.
Remind me one week before this change occurs
How do I set the clock and time zone?
OK
Cancel
Apply

Note: the Additional Clocks and Internet Time tabs are operational. In fact it is possible to synchronise the system time with an NTP time server if required.

Select the Help button to show online help for the recovery environment.

See Also

- WinPE 2 or WinPE 4 Based TBMR Recovery Console
- Start Automatic Recovery Wizard
- Start Manual Recovery Sequence
- Tools
- Show Log and Error Reports
- Copy Log and Error Report Files
- Close Recovery Console and Reboot

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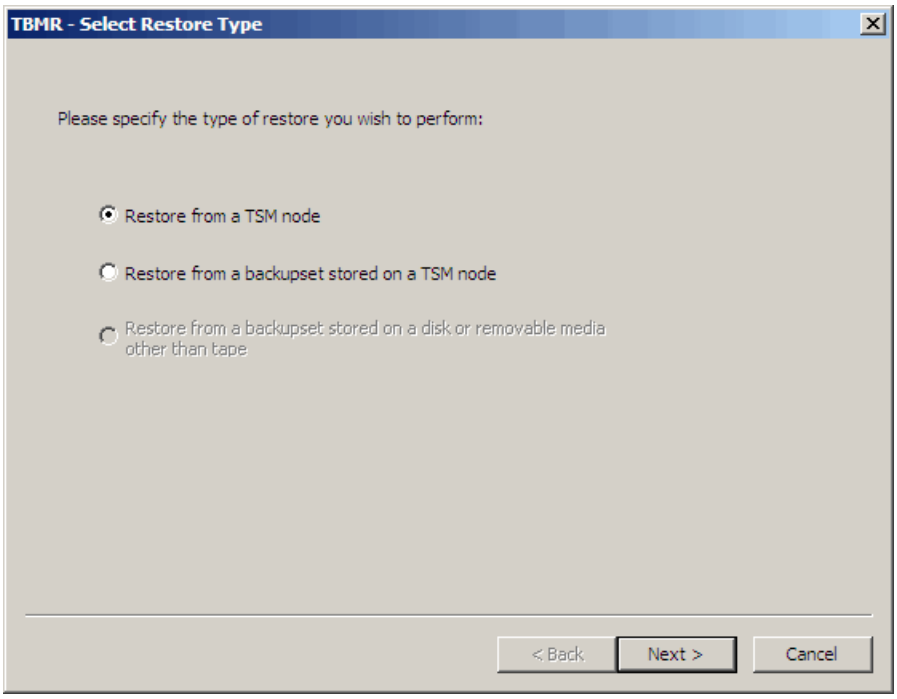
1.2.2 Start Automatic Recovery Wizard

Select the **Start the Automatic Recovery Wizard** option to commence an automatic DR sequence.


TBMR - Select Restore Type
Please specify the type of restore you wish to perform:
Restore from a TSM node
Restore from a backupset stored on a TSM node
Restore from a backupset stored on a disk or removable media other than tape
< Back
Next >
Cancel

At the moment only restoring from a TSM node or an online backupset is supported. A future release will support restoring from a backupset stored on a disk or removable media. Make your choice and press Next> to continue.

In This Section

Restore from Node
Restore from Backupset
Disk Recovery Sequence
Disk Scaling

1.2.2.1 Restore from Node

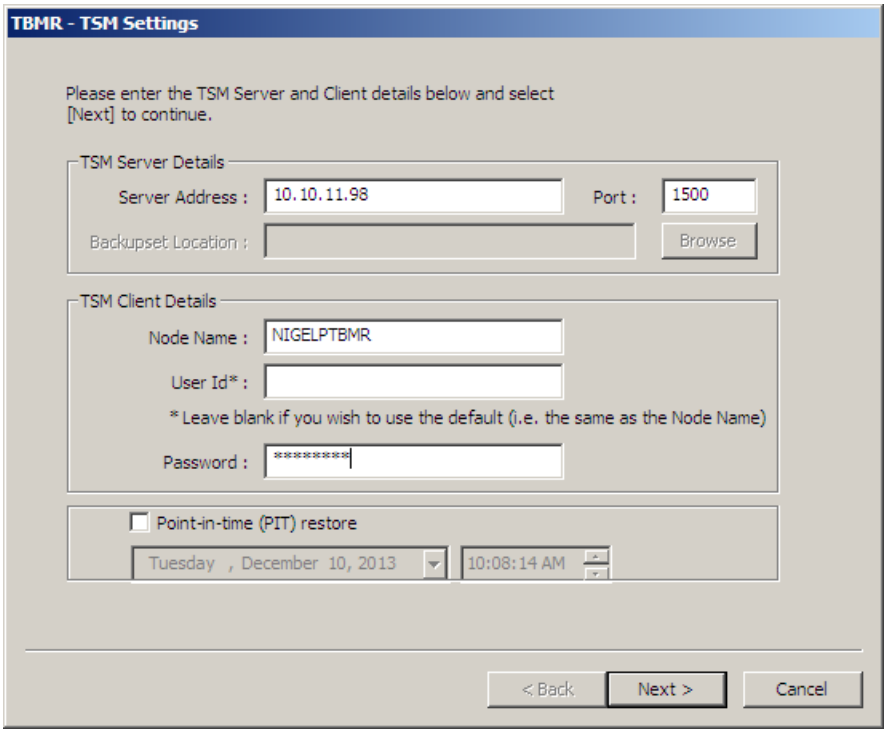
If you selected **Restore from a Node,** select Next>. This will then display the **Enter TSM server details** as shown in the next section.

In This Section

Specify TSM Details and Recovery Date/Time
Select Filespaces To Restore
Confirm Volume Layout
Dissimilar Hardware
Proceed With The Recovery

Specify TSM Details and Recovery Date/Time

The first step of the automatic recovery identifies the location of the **TSM Server** and **Node** used to back up the Client.



Note: You may use an alternative to the normal Node credentials (such as the Administrator account) to access the account. In this case enter the username of the alternative in the User Id field and the corresponding password.

Selecting the **Point-in-time** (PIT) restore mode will allow the system to be recovered from the most recent backup before the specified date and time. This means the version of any file restored will be earlier than the specified date and time. Selecting the down-arrow in the calendar control will bring up a calendar:

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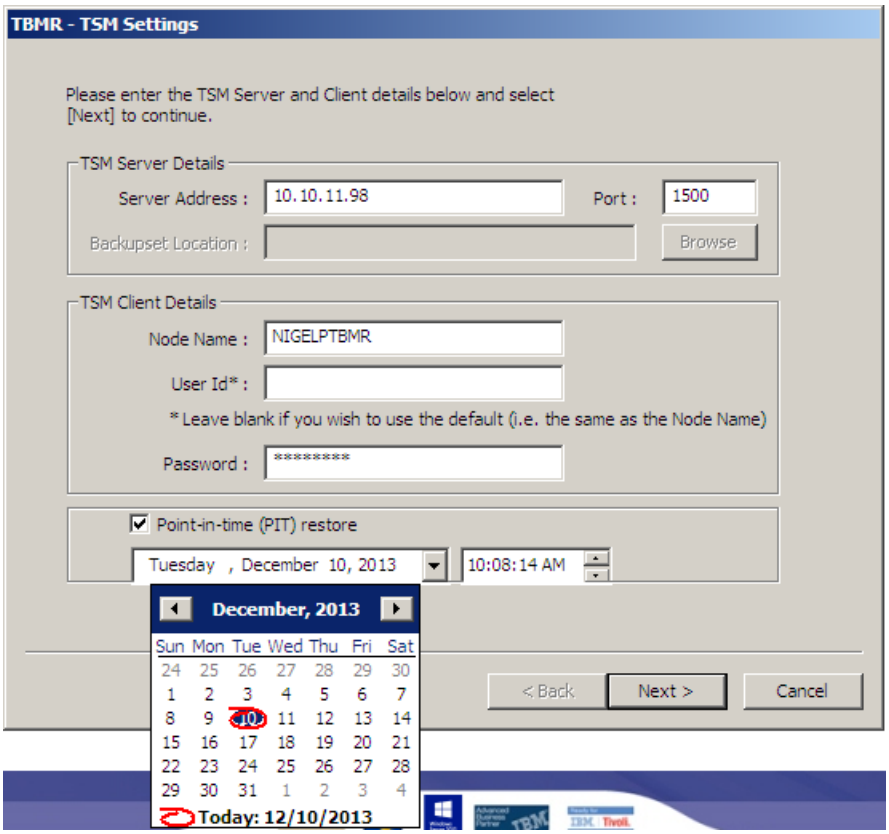


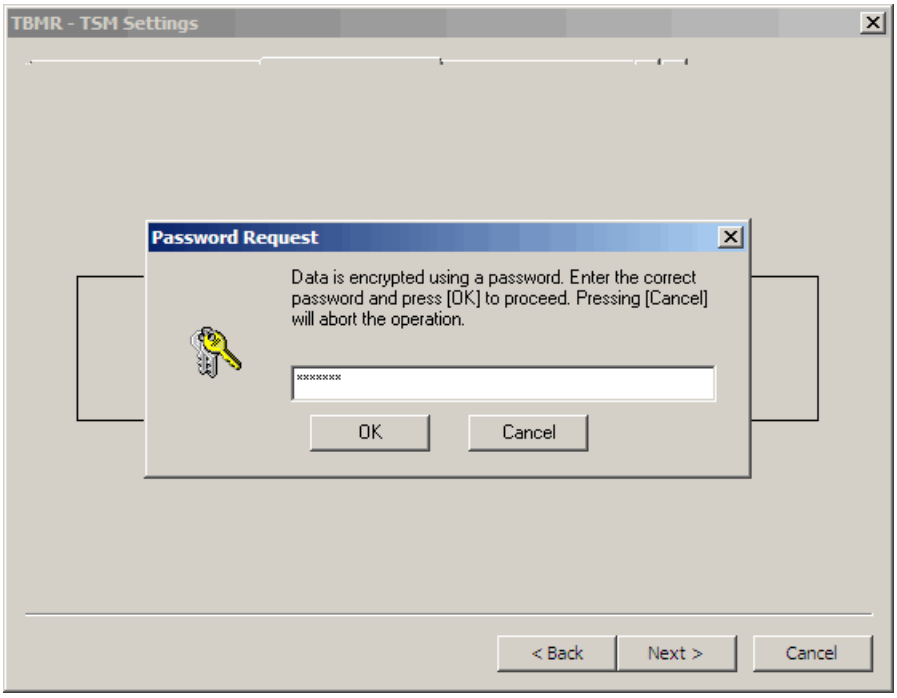
This can be used to scroll the months/years backwards and forwards as necessary.

Note: a future date will result in the latest backup being recovered.

If PIT mode is not selected then, by default, the latest file versions will be restored.

Select Next> to continue.

If the backup including the TBMR configuration folder **TBMRCFG** is encrypted, a prompt for the encryption password will be displayed if not held locally:


TBMR - TSM Settings
Password Request
Data is encrypted using a password. Enter the correct password and press [OK] to proceed. Pressing [Cancel] will abort the operation.
OK
Cancel
< Back
Next >
Cancel

Enter the password used during the backup. Press OK> to proceed. At this point the Node will be accessed on the specified server and the machine configuration extracted.

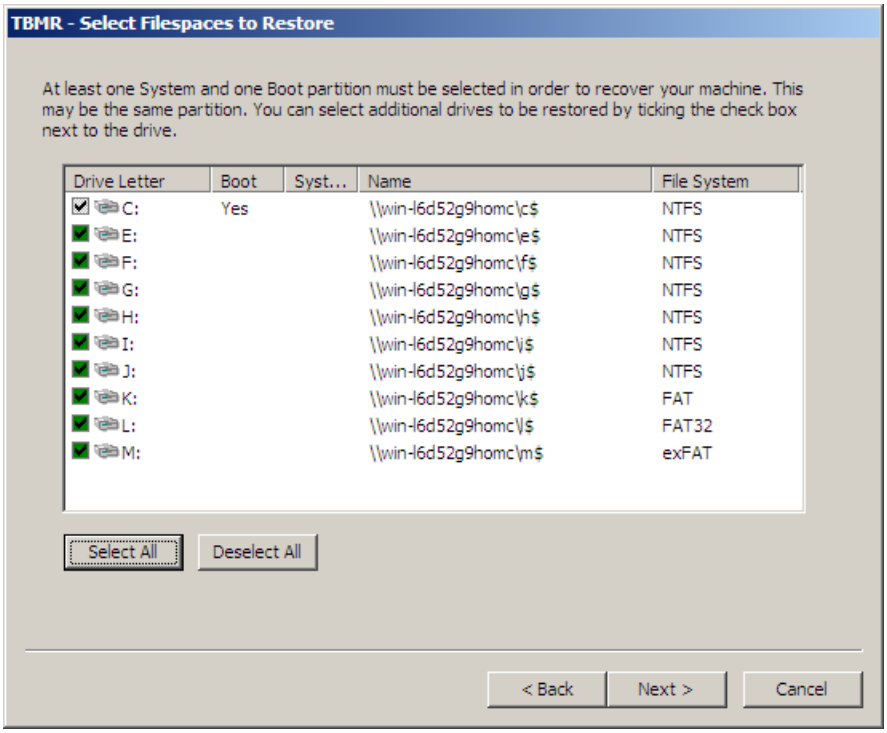
Note: TBMR assumes that TCP/IP is the communication method used between the Client and the Server. Other TSM communication methods are not supported.

See Also

Restore from Node
Select Filespaces To Restore
Confirm Volume Layout
Dissimilar Hardware
Proceed With The Recovery

Select Filespaces To Restore

The next step prompts for the filespaces to restore. Generally, each filespace represents a disk partition or volume. Put a tick against each filespace that should be restored:


TBMR - Select Filespaces to Restore
At least one System and one Boot partition must be selected in order to recover your machine. This may be the same partition. You can select additional drives to be restored by ticking the check box next to the drive.
Drive Letter
Boot
Syst...
Name
File System
C: Yes \\win-l6d52g9homc\c$ NTFS
E: \\win-l6d52g9homc\e$ NTFS
F: \\win-l6d52g9homc\f$ NTFS
G: \\win-l6d52g9homc\g$ NTFS
H: \\win-l6d52g9homc\h$ NTFS
I: \\win-l6d52g9homc\i$ NTFS
J: \\win-l6d52g9homc\j$ NTFS
K: \\win-l6d52g9homc\k$ FAT
L: \\win-l6d52g9homc\l$ FAT32
M: \\win-l6d52g9homc\m$ exFAT
Select All
Deselect All
< Back
Next >
Cancel

Note: the system and boot partitions (even if on different partitions) will always be restored by default.

Click Next> to continue to the next step.

See Also

Restore from Node
Specify TSM Details and Recovery Date/Time
Confirm Volume Layout
Dissimilar Hardware
Proceed With The Recovery

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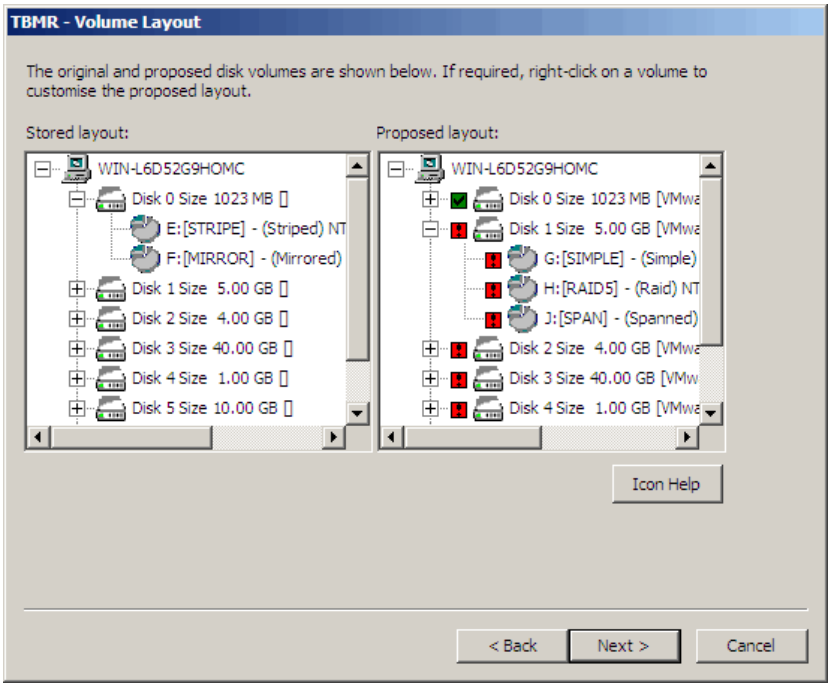
Confirm Volume Layout

The next step in the **Automatic recovery** shows a list of the disks and partitions to be recovered.


TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB []
E:[STRIPE] - (Striped) NT
F:[MIRROR] - (Mirrored)
Disk 1 Size 5.00 GB []
Disk 2 Size 4.00 GB []
Disk 3 Size 40.00 GB []
Disk 4 Size 1.00 GB []
Disk 5 Size 10.00 GB []
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB [VMwa
Disk 1 Size 5.00 GB [VMwa
G:[SIMPLE] - (Simple)
H:[RAID5] - (Raid) NT
J:[SPAN] - (Spanned)
Disk 2 Size 4.00 GB [VMwa
Disk 3 Size 40.00 GB [VMw
Disk 4 Size 1.00 GB [VMwa
Icon Help
< Back
Next >
Cancel

The left-hand panel of the dialogue shows the original disk layout and partitions. The right-hand panel shows how the recovered disks will be partitioned after the recovery.

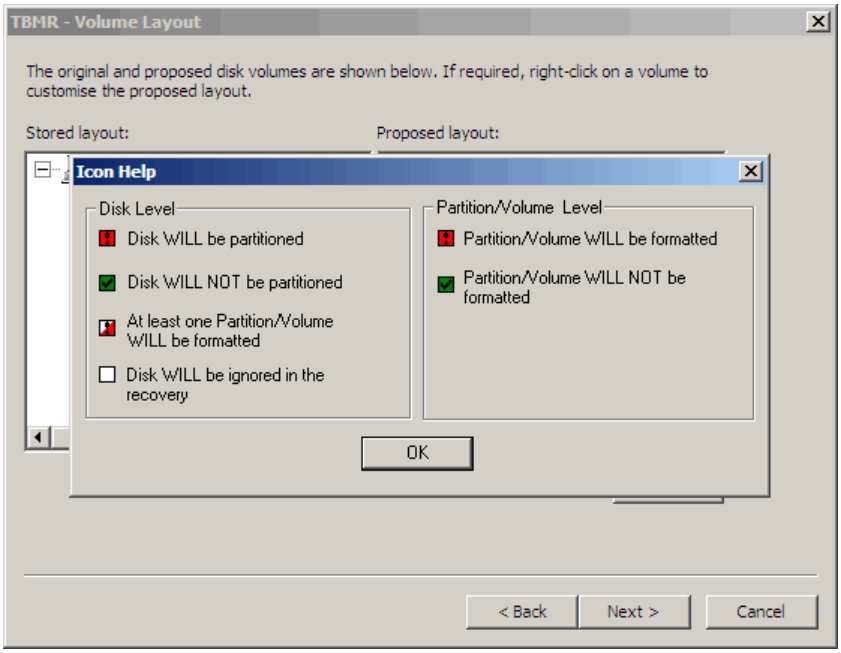
A green tick box ☑ next to a disk signifies that the disk and its underlying partitions will be left intact. Placed next to a partition/volume means that the corresponding partition/volume **WILL NOT** be partitioned.

A red exclamation mark ❗ placed next to a disk means it **WILL** be partitioned during recovery. Placed next to a partition or volume means that the corresponding partition/volume **WILL** be partitioned.

A red/white exclamation mark ❗ placed next to a disk means at least one partition/volume **WILL** be partitioned.

A white box ☐ indicates that the disk will be completely ignored during the recovery.

Click on the Icon Help button to display a summary of this:


TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
Icon Help
Disk Level
Disk WILL be partitioned
Disk WILL NOT be partitioned
At least one Partition/Volume WILL be formatted
Disk WILL be ignored in the recovery
Partition/Volume Level
Partition/Volume WILL be formatted
Partition/Volume WILL NOT be formatted
OK
< Back
Next >
Cancel

When the recovery is to the original system, the contents of both panels will look similar if the number of disks is the same. Possibly the disk sizes will be different.

When performing a recovery to a dissimilar system, the disk mapping can be much more complex. Some of the criteria used to judge the disk mapping are:

- disk geometry
- disk capacity
- if currently formatted, the disk signature

You may right-click on any disk shown in the right-hand panel to select whether the disk will be formatted or not.

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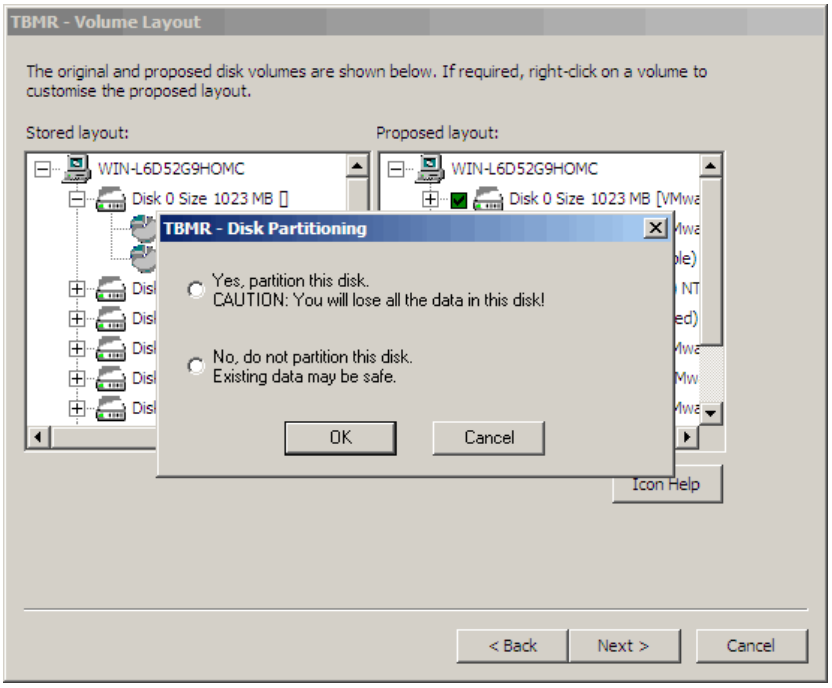
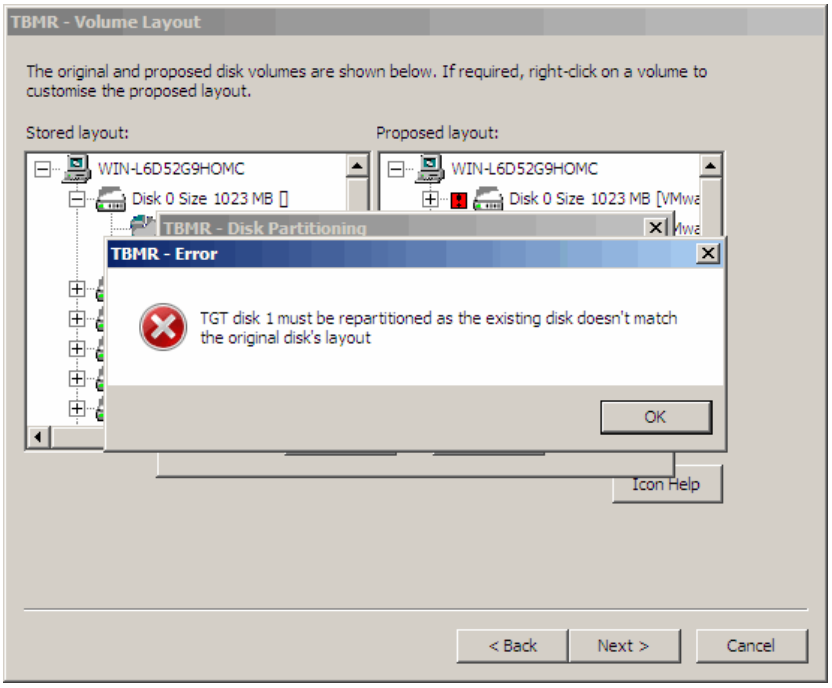
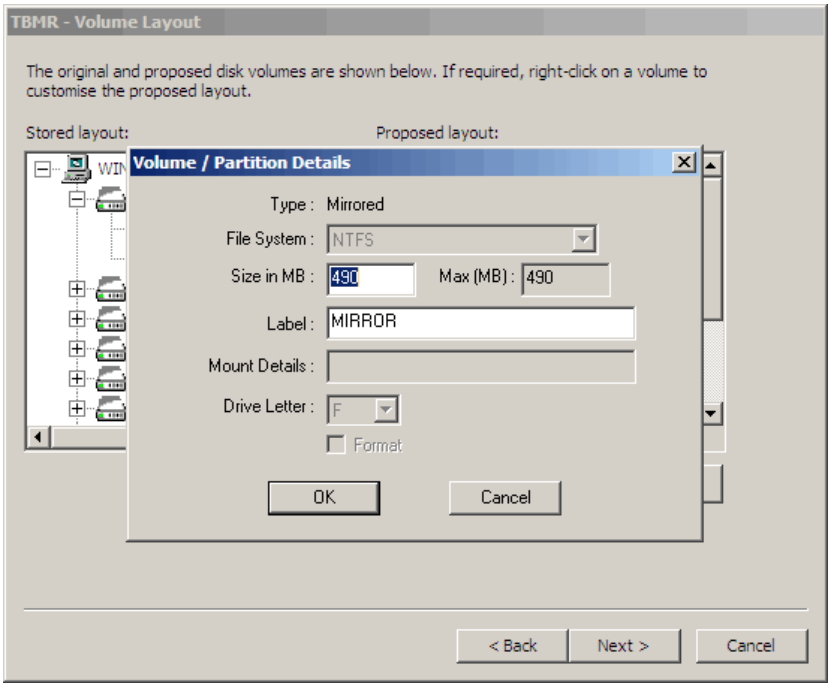

TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB []
Disk 0 Size 1023 MB [VMwa
TBMR - Disk Partitioning
Yes, partition this disk.
CAUTION: You will lose all the data in this disk!
No, do not partition this disk.
Existing data may be safe.
OK
Cancel
Icon Help
< Back
Next >
Cancel

Any attempt to incorrectly turn off formatting will result in this error:


TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB []
Disk 0 Size 1023 MB [VMwa
TBMR - Disk Partitioning
TBMR - Error
TGT disk 1 must be repartitioned as the existing disk doesn't match the original disk's layout
OK
Icon Help
< Back
Next >
Cancel

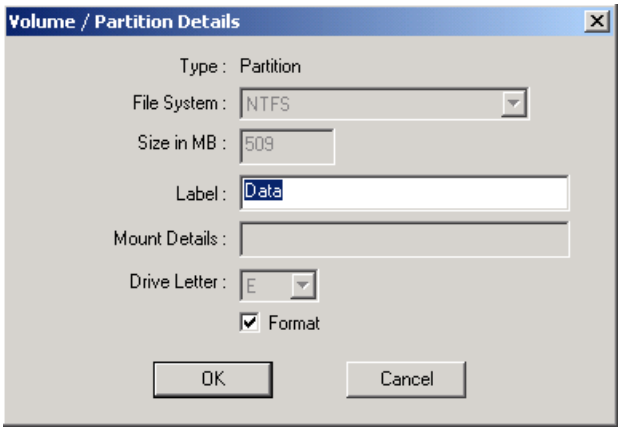
You may also right-click on a partition to allow you to selectively modify the partition parameters or remove it altogether.



You may **Modify** the following partition parameters:

- size in MB (only if disk is shown with a)
- label
- format (yes/no)

The screenshot below shows an example:



Select **Delete** to remove the partition completely (only if disk is shown with a).

If you attempt to either not format or delete a Windows system partition, an error such as this will be displayed:

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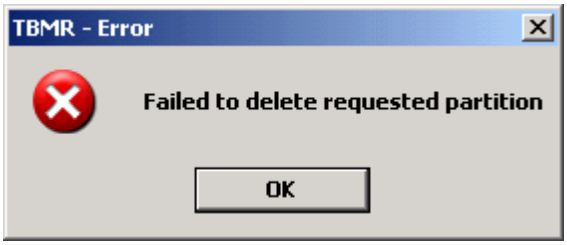


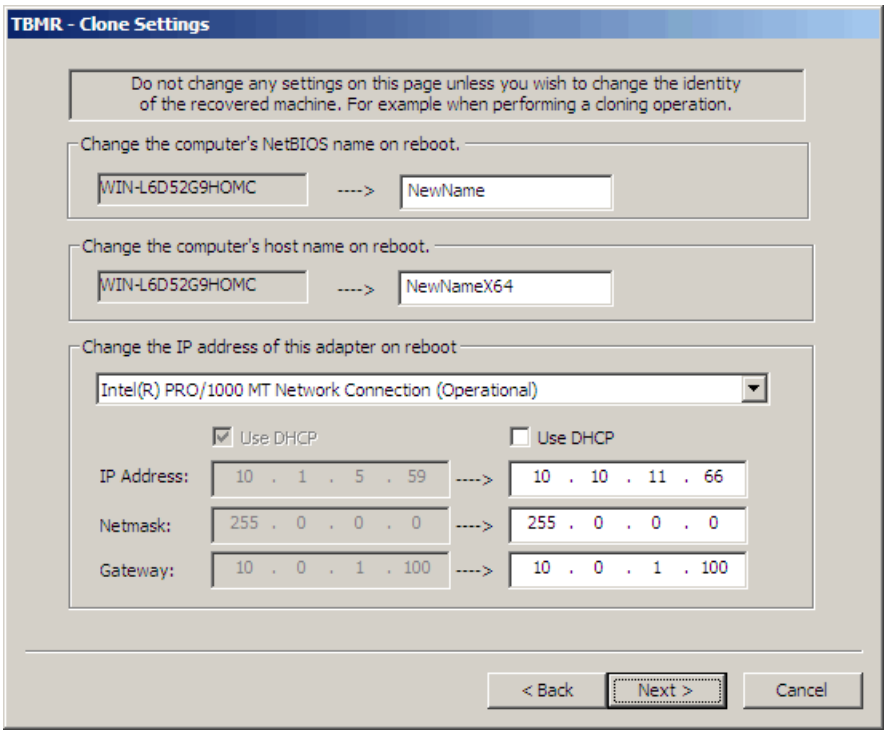
At this stage, nothing has happened to the disks. Press Next> to continue with the recovery.

See Also

Restore from Node
Specify TSM Details and Recovery Date/Time
Select Filespaces To Restore
Dissimilar Hardware
Proceed With The Recovery

Clone Settings

Use this dialogue to change the recovered system's **hostname** and **IP addresses** if required. Select to use either DHCP or enter a valid static IP address.

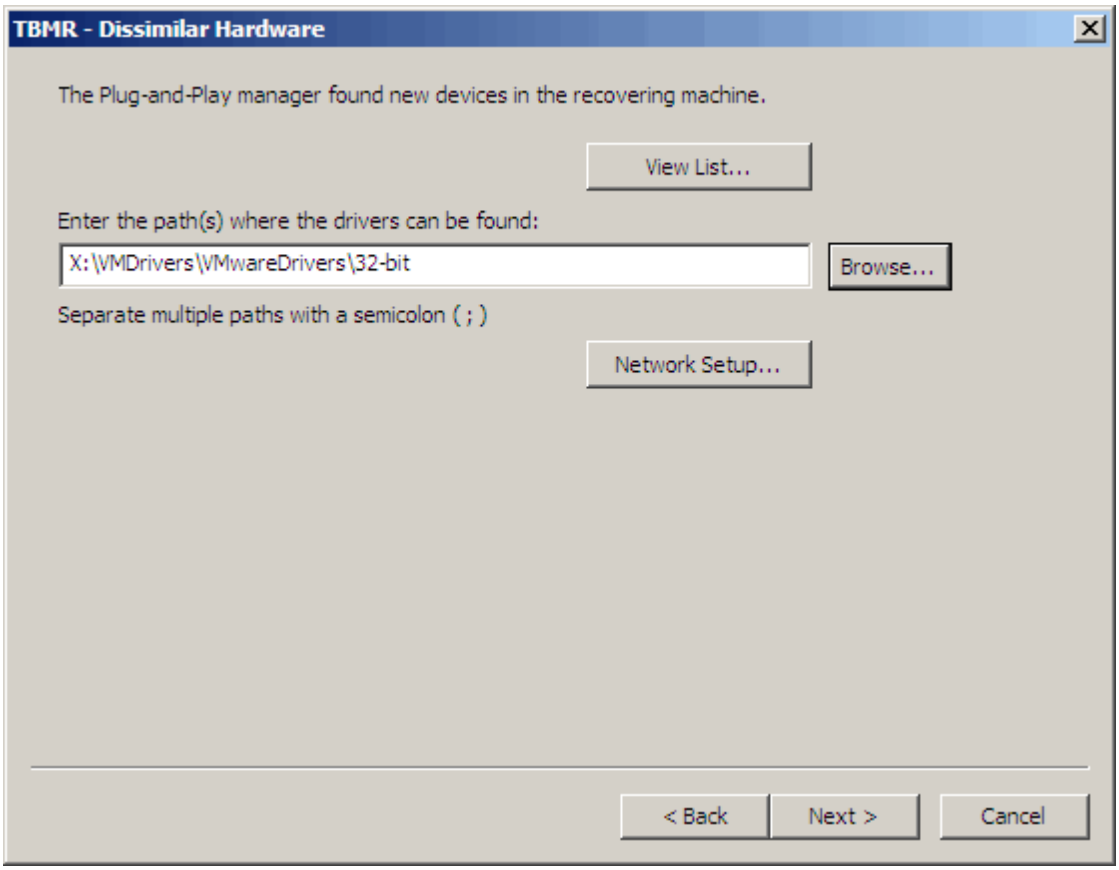

TBMR - Clone Settings
Do not change any settings on this page unless you wish to change the identity of the recovered machine. For example when performing a cloning operation.
Change the computer's NetBIOS name on reboot.
WIN-L6D52G9HOMC
---->
NewName
Change the computer's host name on reboot.
WIN-L6D52G9HOMC
---->
NewNameX64
Change the IP address of this adapter on reboot
Intel(R) PRO/1000 MT Network Connection (Operational)
Use DHCP
Use DHCP
IP Address:
10 . 1 . 5 . 59
---->
10 . 10 . 11 . 66
Netmask:
255 . 0 . 0 . 0
---->
255 . 0 . 0 . 0
Gateway:
10 . 0 . 1 . 100
---->
10 . 0 . 1 . 100
< Back
Next >
Cancel

You may change the IP address for each NIC interface independently. NICs that are currently connected to a network are tagged with **(Operational)**.

If you wish to retain the current hostname and IP addresses leave the fields at their default values and select Next> to continue to the next section.

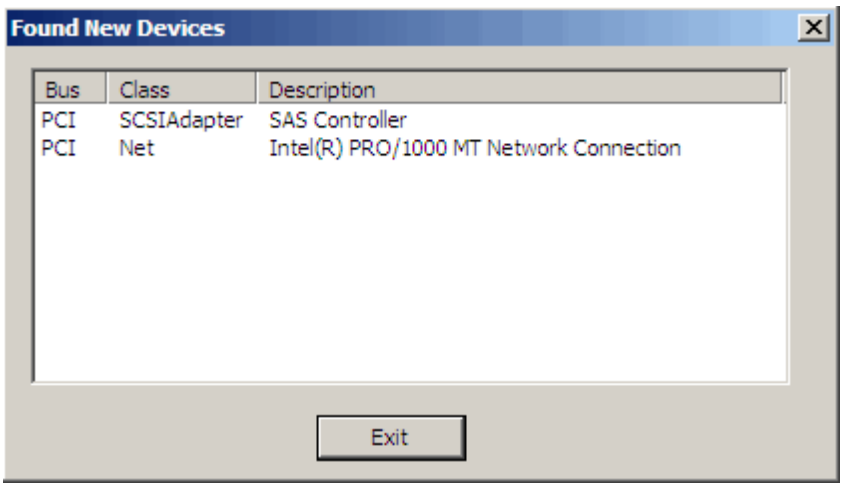
Dissimilar Hardware

Next, the DR process performs a check to determine if there are new devices in the recovering machine that were not present in the original system. If this is true, then this is a 'dissimilar' DR and the following dialogue will be shown to allow the user to specify the location of the new driver files for these devices.


TBMR - Dissimilar Hardware
The Plug-and-Play manager found new devices in the recovering machine.
View List...
Enter the path(s) where the drivers can be found:
X:\VMDrivers\VMwareDrivers\32-bit
Browse...
Separate multiple paths with a semicolon (;)
Network Setup...
< Back
Next >
Cancel

Specify the default path or paths to be searched for the missing driver files. The paths may be on a local device (eg. a USB disk) or a network share. Use the Network Setup... button if you need to map a network share. In either case, the paths must be accessible to the WinPE 2 or WinPE 4 environment.

Select View List... to see a list of the new devices.



Ensure the specified path or paths contain the correct drivers for the dissimilar machine (ie. correct 32 or 64-bit version as appropriate for the OS). At the end of the DR sequence, the specified paths will be searched for the missing drivers and automatically injected into the recovered system.

By default, it is only necessary to inject drivers for mass storage devices and, in some some cases, network devices. The 'Load all types of drivers' tick box will force the DR to look for all drivers in

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addition to mass storage and network devices. For example, this could include graphics cards, USB and chipset devices, but these are rarely required and not recommended.

Note that if drivers are not found for the new boot disk then, although WinPE 2 or WinPE 4 will be able to recover the files to the disk, there is a good chance that it will not boot correctly.

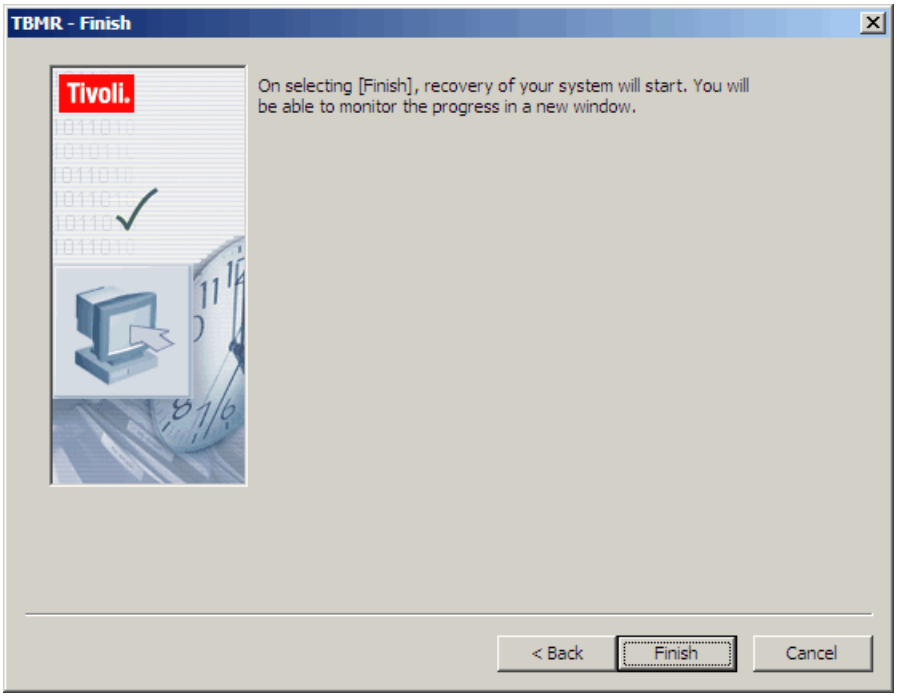
Press Next> to proceed with the recovery.

See Also

Restore from Node
Specify TSM Details and Recovery Date/Time
Select Filespaces To Restore
Confirm Volume Layout
Proceed With The Recovery

Proceed With The Recovery

Before continuing with the actual file recovery, a final warning screen is displayed.


TBMR - Finish
Tivoli.
On selecting [Finish], recovery of your system will start. You will be able to monitor the progress in a new window.
< Back
Finish
Cancel

If you are happy with the specified recovery configuration, press Finish. This will commence the **actual** file recovery.

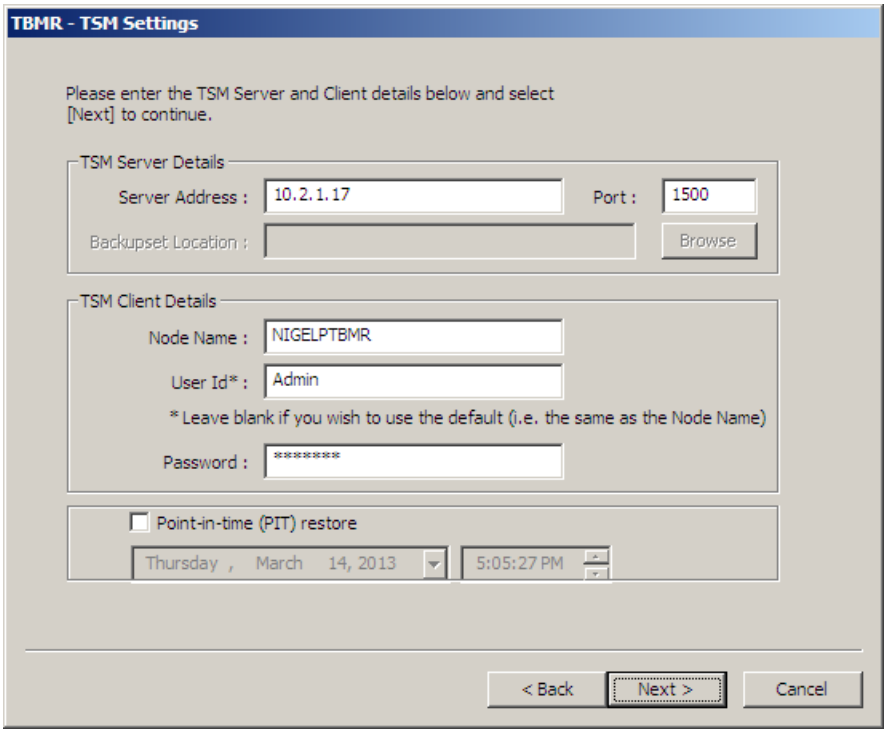
Note: this procedure will COMPLETELY DESTROY any existing data on those disks selected for format (ie. shown with a). Disks or partitions tagged as no format (ie. shown with a) will remain intact.

See Also

Restore from Node
Specify TSM Details and Recovery Date/Time
Select Filespaces To Restore
Dissimilar Hardware
Confirm Volume Layout

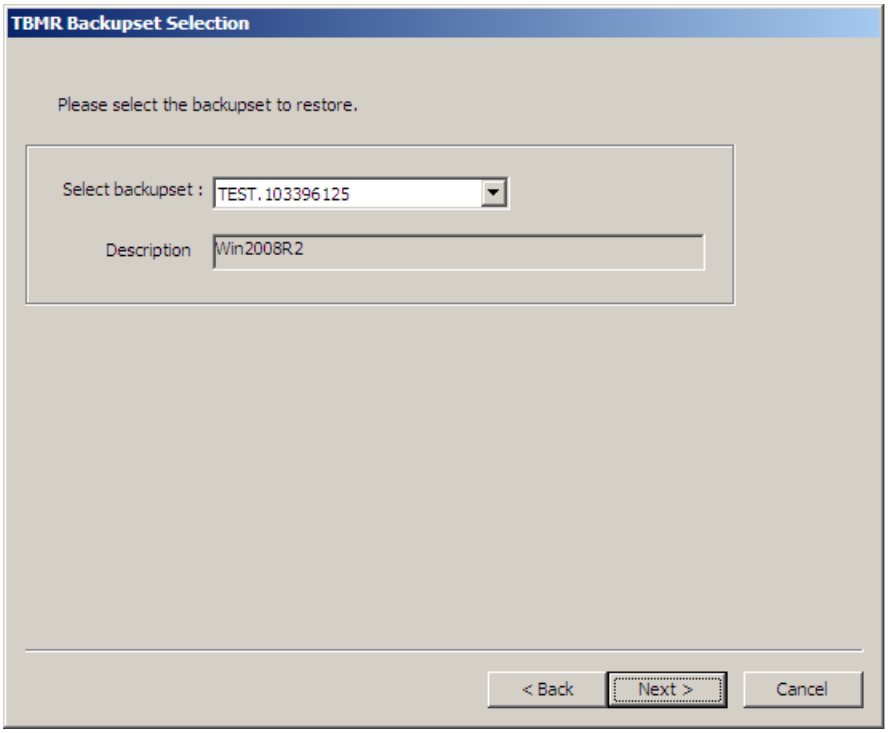
1.2.2.2 Restore from Backupset

If you selected **Restore from a Backupset**, select Next>. This will then display the **Enter TSM** server details:



Example above shows the server Admin credentials being used to recover the backupset instead of the Node credentials.

The system configuration will then be restored from the appropriate backupset, which is selected from the next dialogue:



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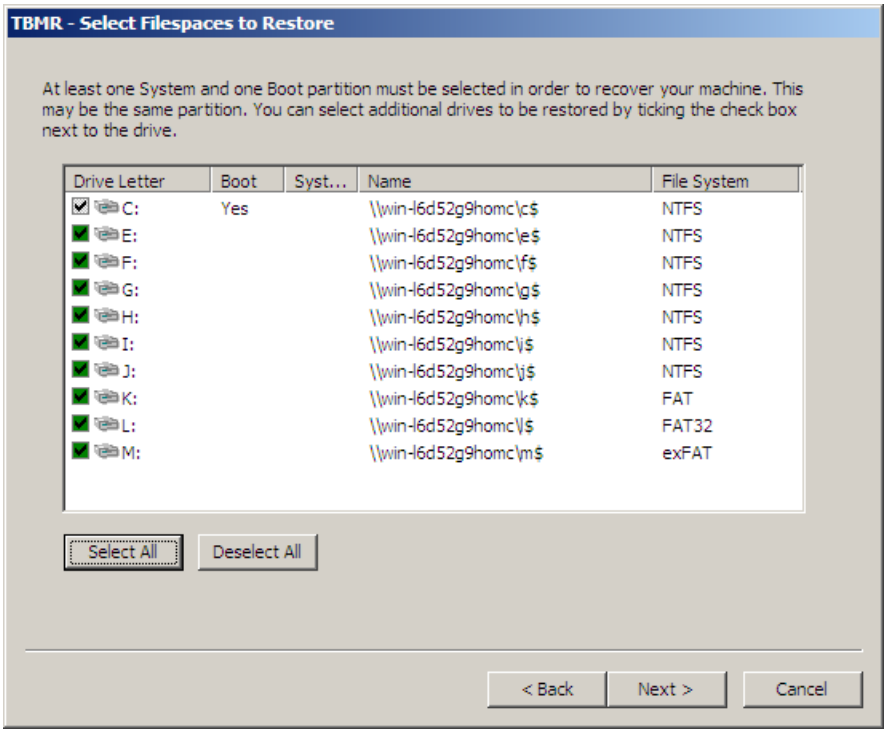
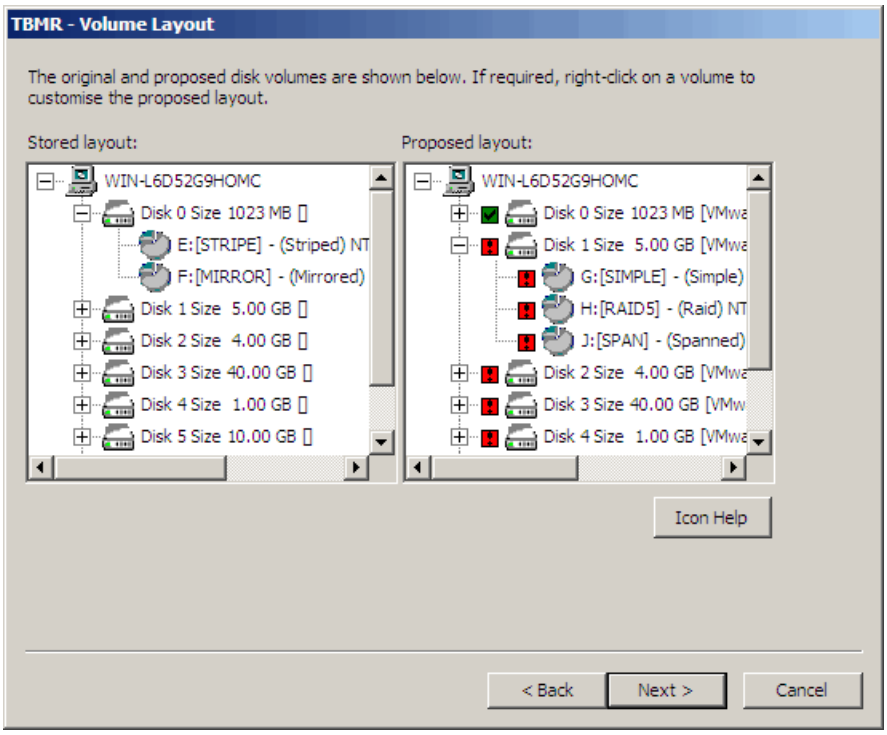
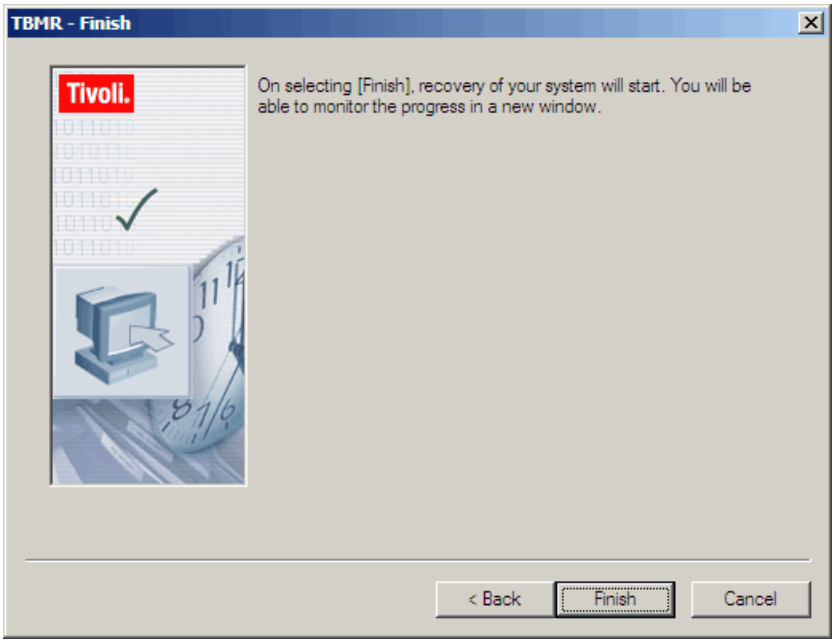
The configuration will then be retrieved from the selected backupset. The DR process continues from the **Select Filespaces to Restore** dialogue:


TBMR - Select Filespaces to Restore
At least one System and one Boot partition must be selected in order to recover your machine. This may be the same partition. You can select additional drives to be restored by ticking the check box next to the drive.
Drive Letter
Boot
Syst...
Name
File System
C: Yes \\win-l6d52g9homc\c$ NTFS
E: \\win-l6d52g9homc\e$ NTFS
F: \\win-l6d52g9homc\f$ NTFS
G: \\win-l6d52g9homc\g$ NTFS
H: \\win-l6d52g9homc\h$ NTFS
I: \\win-l6d52g9homc\i$ NTFS
J: \\win-l6d52g9homc\j$ NTFS
K: \\win-l6d52g9homc\k$ FAT
L: \\win-l6d52g9homc\l$ FAT32
M: \\win-l6d52g9homc\m$ exFAT
Select All
Deselect All
< Back
Next >
Cancel

Select the filespaces to restore and then the partition layout for the recovering system:


TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB []
E:[STRIPE] - (Striped) NT
F:[MIRROR] - (Mirrored)
Disk 1 Size 5.00 GB []
Disk 2 Size 4.00 GB []
Disk 3 Size 40.00 GB []
Disk 4 Size 1.00 GB []
Disk 5 Size 10.00 GB []
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB [VMwa
Disk 1 Size 5.00 GB [VMwa
G:[SIMPLE] - (Simple)
H:[RAID5] - (Raid) NT
J:[SPAN] - (Spanned)
Disk 2 Size 4.00 GB [VMwa
Disk 3 Size 40.00 GB [VMw
Disk 4 Size 1.00 GB [VMwa
Icon Help
< Back
Next >
Cancel

Finally, select Finish and the recovery will then proceed.


TBMR - Finish
Tivoli.
On selecting [Finish], recovery of your system will start. You will be able to monitor the progress in a new window.
< Back
Finish
Cancel

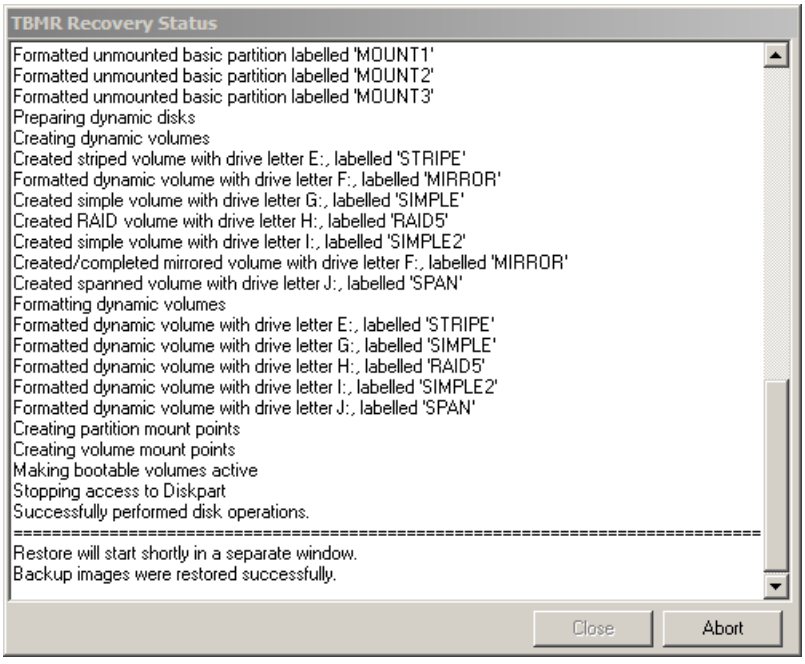
The subsequent recovery continues as described in section Disk Recovery Sequence.

See Also

Start Automatic Recovery Wizard
Restore from Node
Disk Recovery Sequence
Disk Scaling

1.2.2.3 Disk Recovery Sequence

The **Recovery Sequence** begins by preparing the disks selected for the recovery.


TBMR Recovery Status
Formatted unmounted basic partition labelled 'MOUNT1'
Formatted unmounted basic partition labelled 'MOUNT2'
Formatted unmounted basic partition labelled 'MOUNT3'
Preparing dynamic disks
Creating dynamic volumes
Created striped volume with drive letter E:, labelled 'STRIPE'
Formatted dynamic volume with drive letter F:, labelled 'MIRROR'
Created simple volume with drive letter G:, labelled 'SIMPLE'
Created RAID volume with drive letter H:, labelled 'RAID5'
Created simple volume with drive letter I:, labelled 'SIMPLE2'
Created/completed mirrored volume with drive letter F:, labelled 'MIRROR'
Created spanned volume with drive letter J:, labelled 'SPAN'
Formatting dynamic volumes
Formatted dynamic volume with drive letter E:, labelled 'STRIPE'
Formatted dynamic volume with drive letter G:, labelled 'SIMPLE'
Formatted dynamic volume with drive letter H:, labelled 'RAID5'
Formatted dynamic volume with drive letter I:, labelled 'SIMPLE2'
Formatted dynamic volume with drive letter J:, labelled 'SPAN'
Creating partition mount points
Creating volume mount points
Making bootable volumes active
Stopping access to Diskpart
Successfully performed disk operations.
Restore will start shortly in a separate window.
Backup images were restored successfully.
Close
Abort

This involves:

- disk mapping original layout to new

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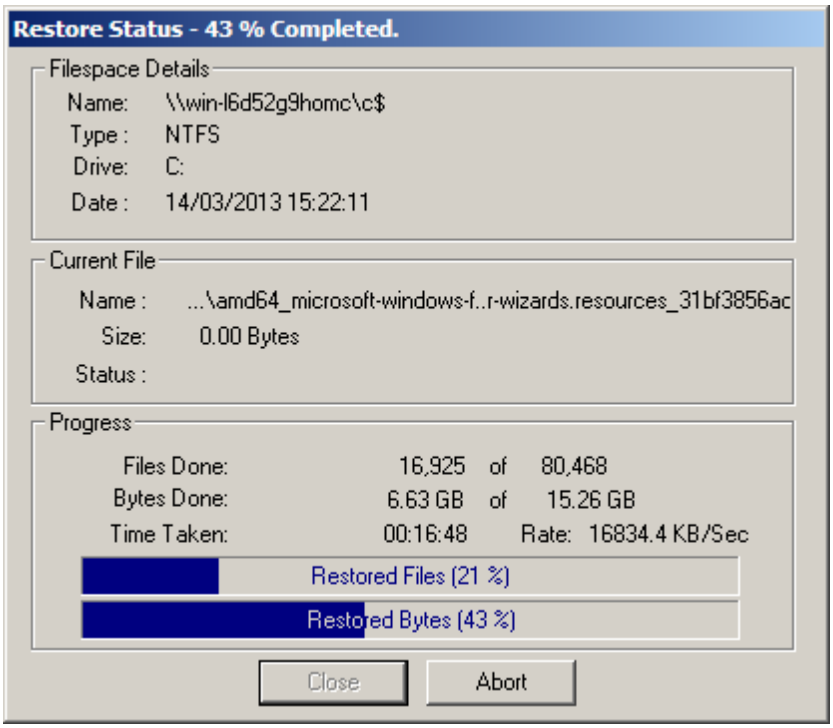
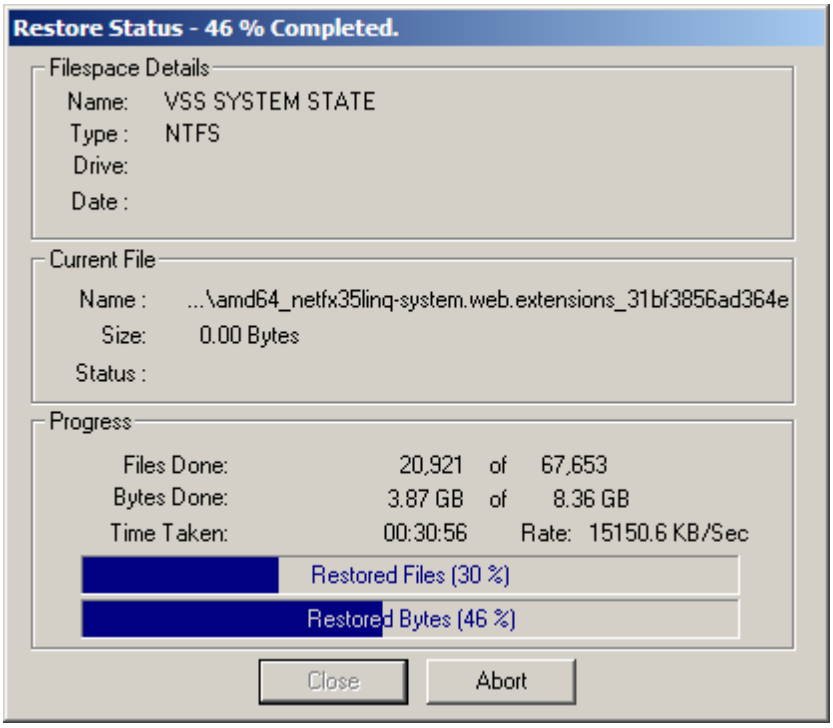
- cleaning (removing any existing disk partitions)
- removing any existing dynamic volume databases
- re-creating the partitions
- converting to dynamic volumes if required
- formatting to the required partition type
- create partition/volume mount points
- make bootable volumes active

The next step is to recover the filespaces to the selected target disks/partitions. A new window appears containing the restore status of recovered files, with progress bars indicating how much of the backup has been restored. This display also shows the recovery statistics in terms of time, size and throughput.

The recovery is divided into different phases: first the recovery of each volume filespace selected,



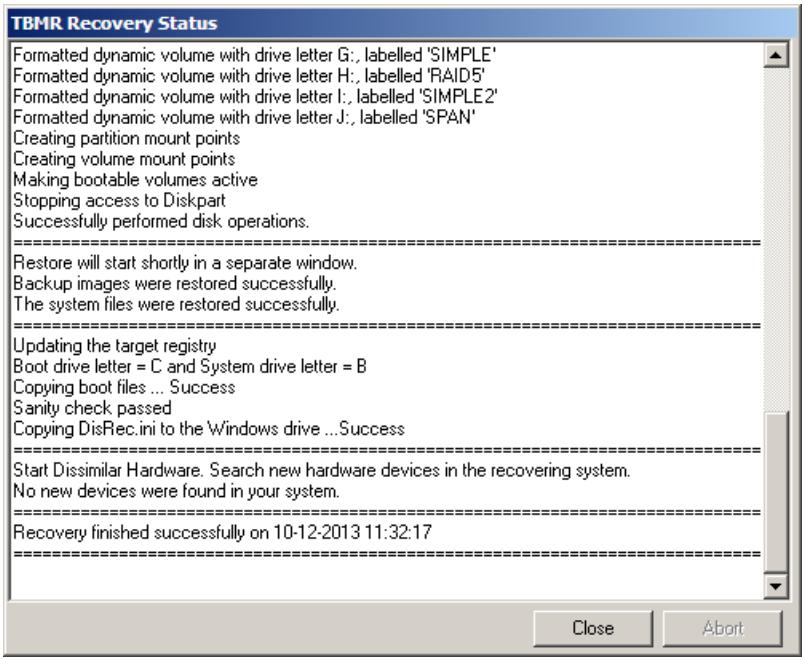
followed by *SystemState*:



This process may take some minutes if the backups are large. You may select the Abort button to terminate the file recovery process, but this may leave a disk or partition in an unpredictable state, which may render it unusable.

If any errors occur during the recovery, an error message will be shown in the window. Refer to the logs post recovery to establish the cause of any error. The final steps of the recovery are to:

- run a sanity check to determine if all the expected boot files are present on the boot volume
- run a dissimilar hardware check to determine if new drivers are required for new boot devices


TBMR Recovery Status
Formatted dynamic volume with drive letter G:, labelled 'SIMPLE'
Formatted dynamic volume with drive letter H:, labelled 'RAID5'
Formatted dynamic volume with drive letter I:, labelled 'SIMPLE2'
Formatted dynamic volume with drive letter J:, labelled 'SPAN'
Creating partition mount points
Creating volume mount points
Making bootable volumes active
Stopping access to Diskpart
Successfully performed disk operations.
Restore will start shortly in a separate window.
Backup images were restored successfully.
The system files were restored successfully.
Updating the target registry
Boot drive letter = C and System drive letter = B
Copying boot files ... Success
Sanity check passed
Copying DisRec.ini to the Windows drive ...Success
Start Dissimilar Hardware. Search new hardware devices in the recovering system.
No new devices were found in your system.
Recovery finished successfully on 10-12-2013 11:32:17
Close
Abort

Finally, press Close to return to the **Recovery Console** main menu. At this point, you may want to

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view the recovery logs and perhaps copy the logs to a local device or remote share before selecting to reboot.

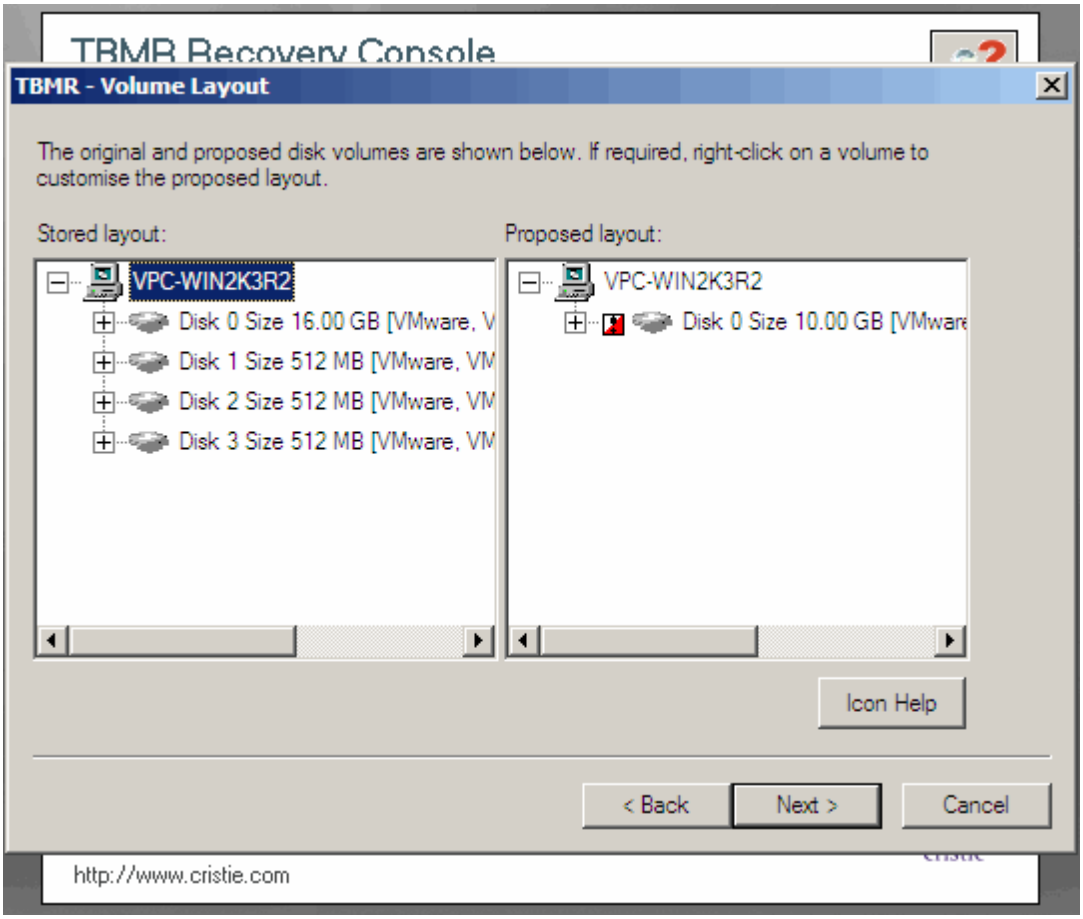
Note:recovery logs are also saved to the recovered system to the TBMR installation sub-folder 'Temp' (e.g. "C:\Program Files\Cristie\TBMR\Temp")

See Also

Start Automatic Recovery Wizard
Restore from Node
Restore from Backupset
Disk Scaling

1.2.2.4 Disk Scaling

In situations where the target system has fewer or smaller disks than the original system, *Disk Scaling* will come into effect.


TBMR Recovery Console
TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
VPC-WIN2K3R2
Disk 0 Size 16.00 GB [VMware, V
Disk 1 Size 512 MB [VMware, VM
Disk 2 Size 512 MB [VMware, VM
Disk 3 Size 512 MB [VMware, VM
VPC-WIN2K3R2
Disk 0 Size 10.00 GB [VMware
Icon Help
< Back
Next >
Cancel
http://www.cristie.com

The above example shows a recovery from an original system with 7 physical disks, to a target system with only one disk. The target disk is also much smaller than the original system disk.

In this scenario, TBMR will select as many disks to recover as possible (in this case only one disk - the boot disk). In addition, it will scale the partitions down in proportion to their original size and occupancy. This can be complicated by having, say, mirrored dynamic volumes when the mirror will need to be broken - if only one disk exists on the target (or it has been tagged as not to modify).

Note 1: the Volume Layout dialogue will only show disks in the left hand panel that can be removed.

Note 2: during a recovery to a system with larger disks, the partition sizes will remain the same as the original by default. However, in this case, it is possible to increase partition size manually during the recovery by right-clicking on the partition icon and selecting Modify.

.

See Also

Start Automatic Recovery Wizard
Restore from Node
Restore from Backupset
Disk Recovery Sequence

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1.2.3 Start Manual Recovery Sequence

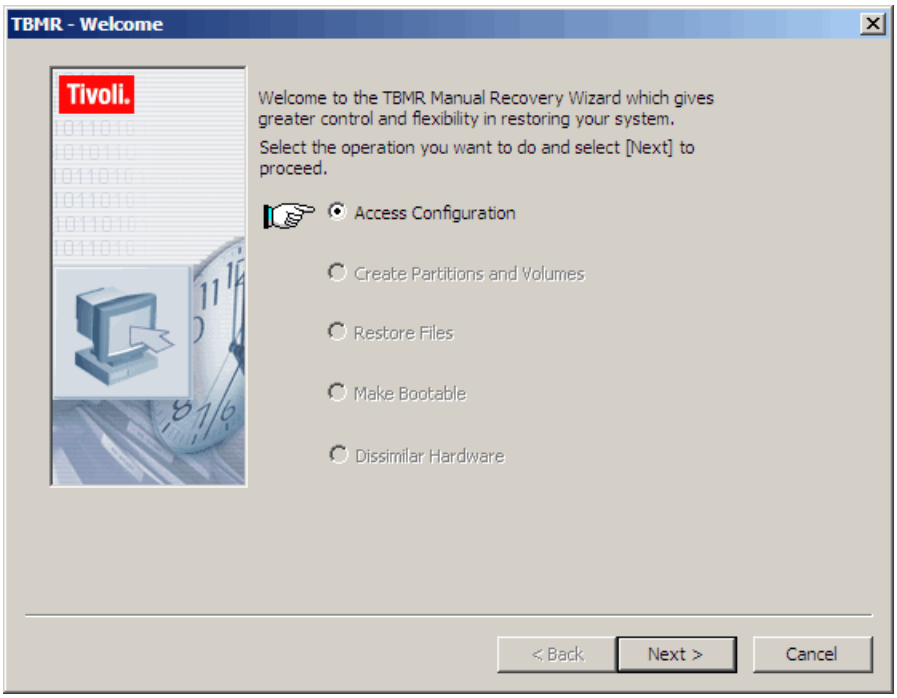
Select the **Start the Manual Recovery Wizard** to commence a manual DR sequence. This option will stop after each step in the DR sequence allowing the DR to be aborted or the step to be repeated with different parameters.

In This Section

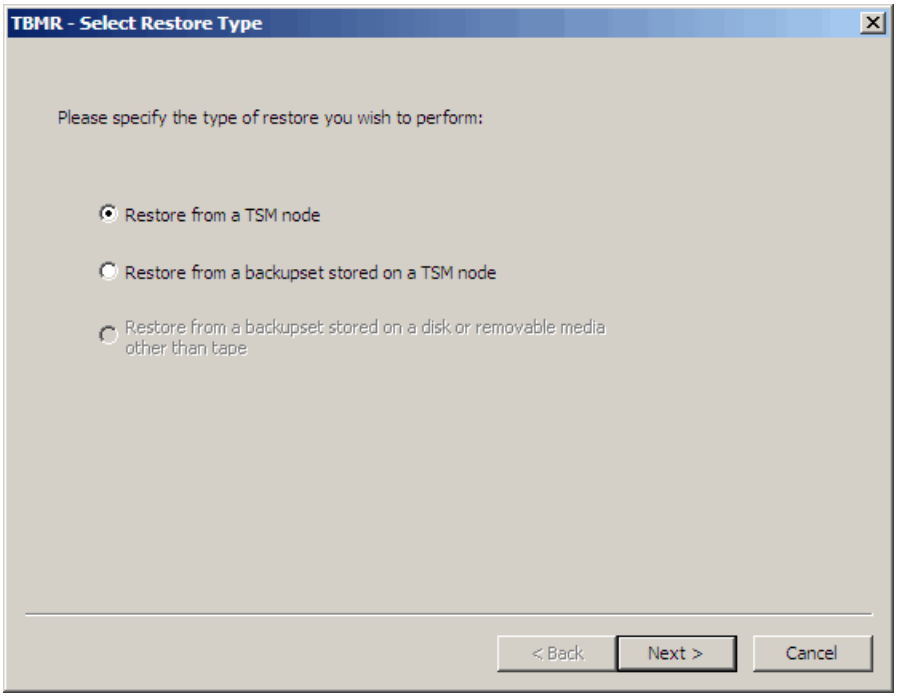
Locate Configuration
Create Partition and Volumes
Restore Files
Make Bootable
Dissimilar Hardware

1.2.3.1 Locate Configuration

The first step of the manual DR sequence is to provide the location of the DR configuration.

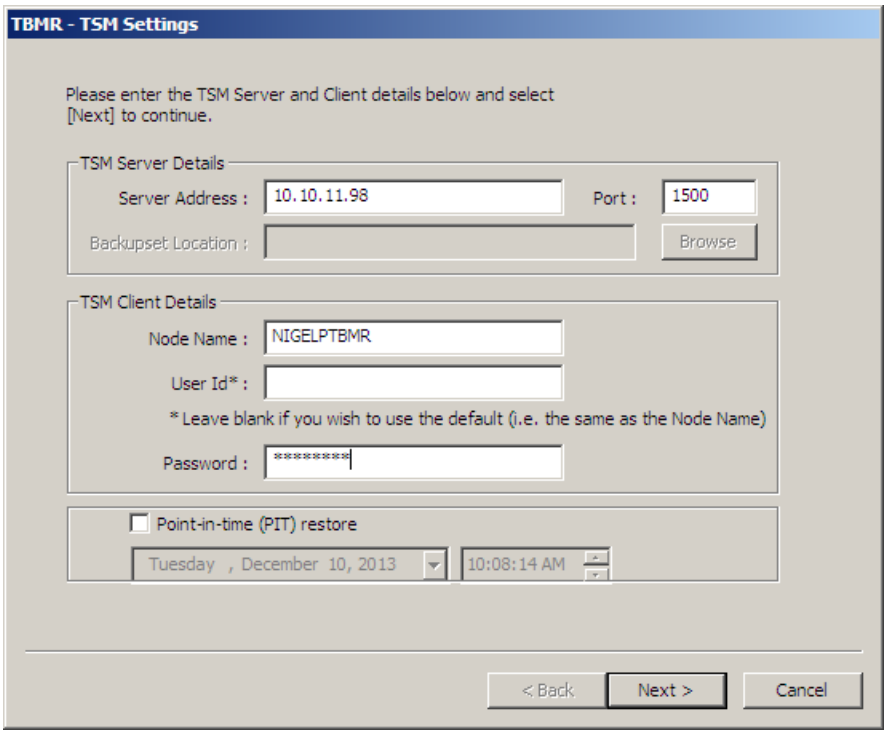

TBMR - Welcome
Tivoli.
Welcome to the TBMR Manual Recovery Wizard which gives greater control and flexibility in restoring your system.
Select the operation you want to do and select [Next] to proceed.
Access Configuration
Create Partitions and Volumes
Restore Files
Make Bootable
Dissimilar Hardware
< Back
Next >
Cancel

Press Next> to proceed to the first step of the sequence. Press Cancel to abort the recovery sequence at this point. You will then be presented with a dialogue prompting you to select the type of the TSM restore.


TBMR - Select Restore Type
Please specify the type of restore you wish to perform:
Restore from a TSM node
Restore from a backupset stored on a TSM node
Restore from a backupset stored on a disk or removable media other than tape
< Back
Next >
Cancel

Restoring from a TSM node or an online backupset is supported.

Press Next> to continue to:



Specify the location of the **TSM Server** and **Node** used to back up the Client.

Selecting the **Point-in-time** (PIT) restore mode will allow the system to be recovered from the most recent backup before the specified date and time. This means the version of any file restored will be earlier than the specified date and time. Selecting the down-arrow in the calendar control will bring up a calendar:

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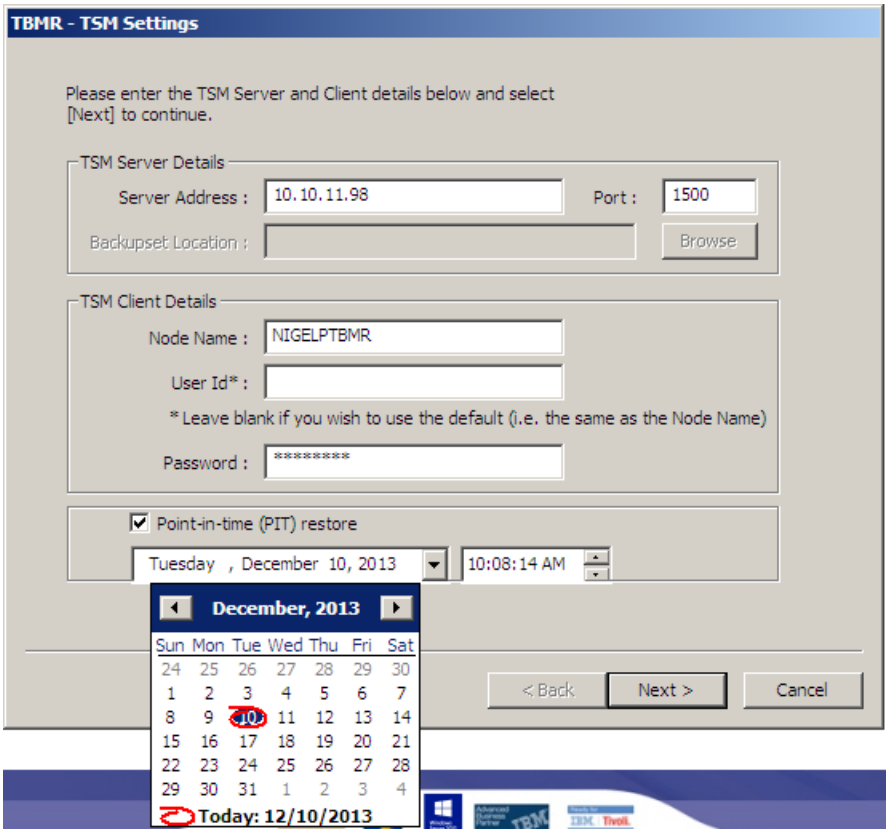

TBMR - TSM Settings
Please enter the TSM Server and Client details below and select [Next] to continue.
TSM Server Details
Server Address :
10.10.11.98
Port :
1500
Backupset Location :
Browse
TSM Client Details
Node Name :
NIGELPTBMR
User Id* :
* Leave blank if you wish to use the default (i.e. the same as the Node Name)
Password :
Point-in-time (PIT) restore
Tuesday , December 10, 2013
10:08:14 AM
December, 2013
Sun Mon Tue Wed Thu Fri Sat
24 25 26 27 28 29 30
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 1 2 3 4
Today: 12/10/2013
< Back
Next >
Cancel

This can be used to scroll the months/years backwards and forwards as necessary.

Note: a future date will result in the latest backup being recovered.

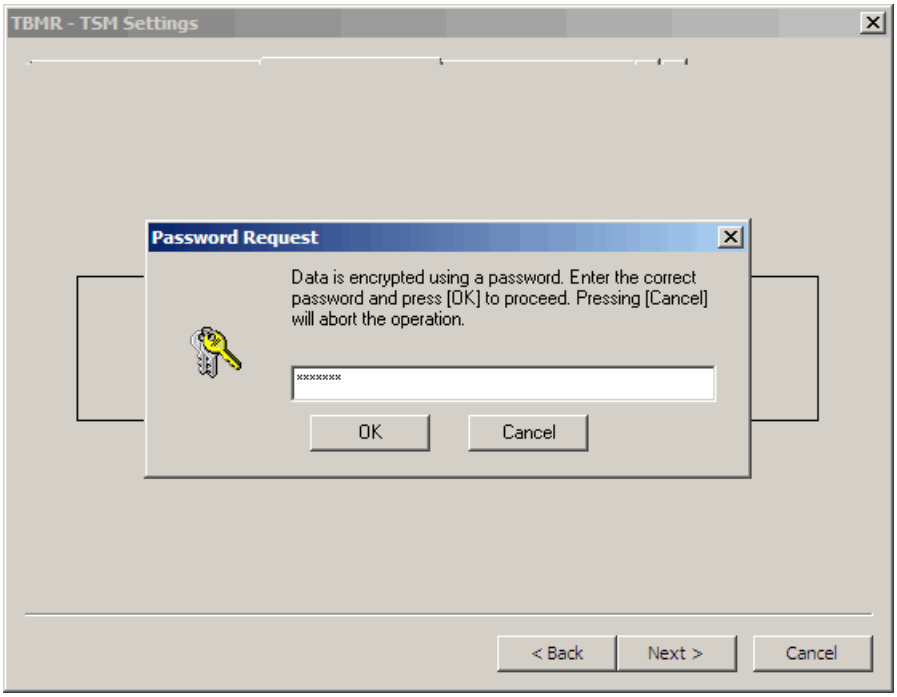
The next dialogue displayed depends upon whether you selected **Restore from Node** or **Restore from Backupset**.

In This Section

Restore From Node
Restore From Backupset

Restore From Node

Select Next> to continue. If the backup including the TBMR configuration folder **TBMRCFG** is encrypted, a prompt for the encryption password will be displayed if not held locally:


TBMR - TSM Settings
Password Request
Data is encrypted using a password. Enter the correct password and press [OK] to proceed. Pressing [Cancel] will abort the operation.
****
OK
Cancel
< Back
Next >
Cancel

Enter the password used during the backup and press OK.

See Also

Locate Configuration
Restore From Backupset

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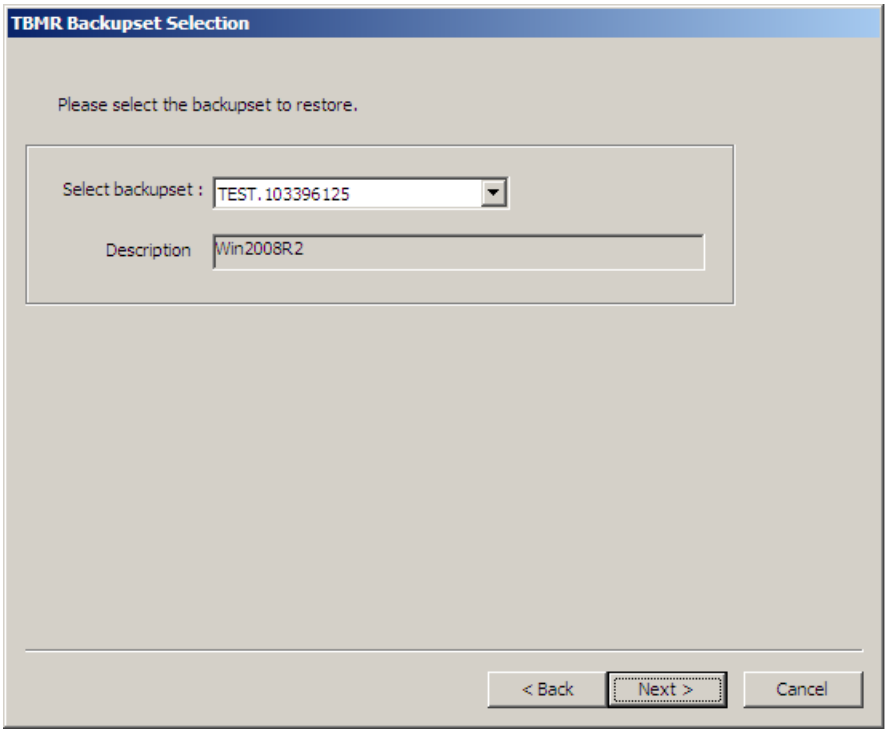
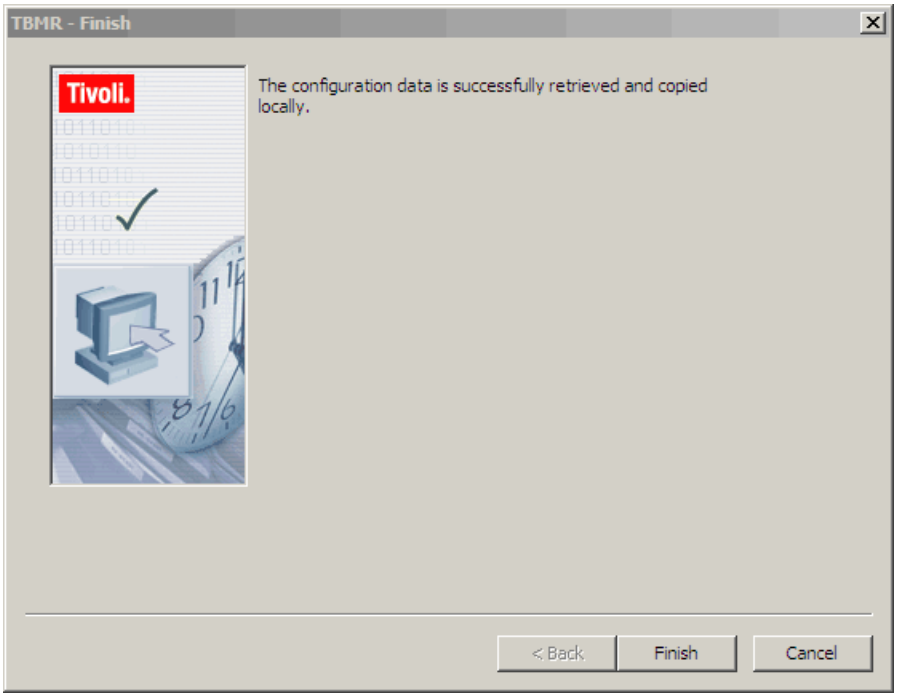
Restore From Backupset

The system configuration will be restored from the appropriate backupset, which is selected from the next dialogue:



Successful extraction of the configuration from the server is confirmed with the following dialogue:



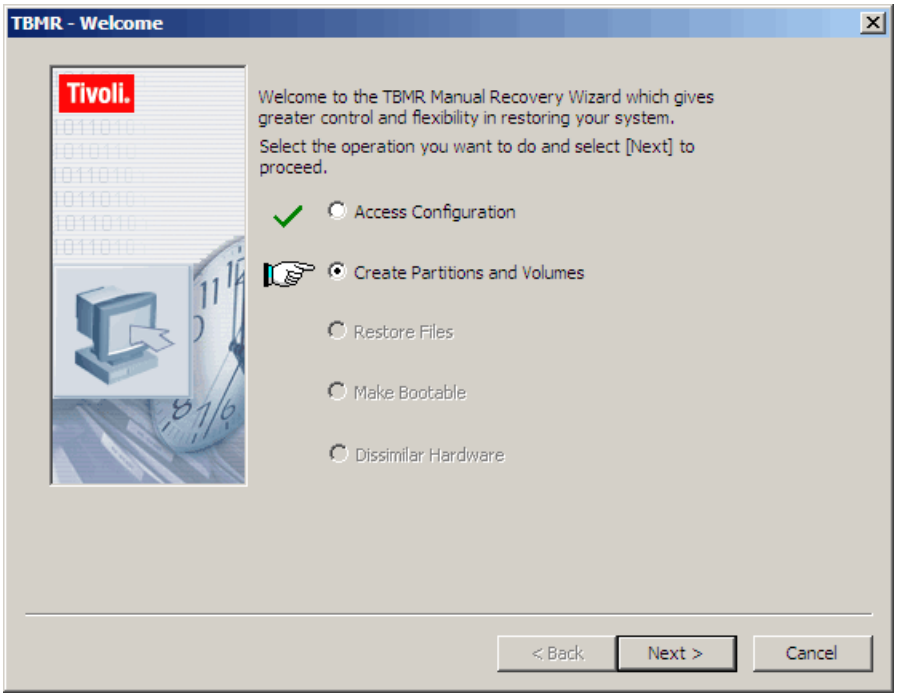
Select Finish and control returns to the next step in the **Manual Recovery** sequence.

See Also

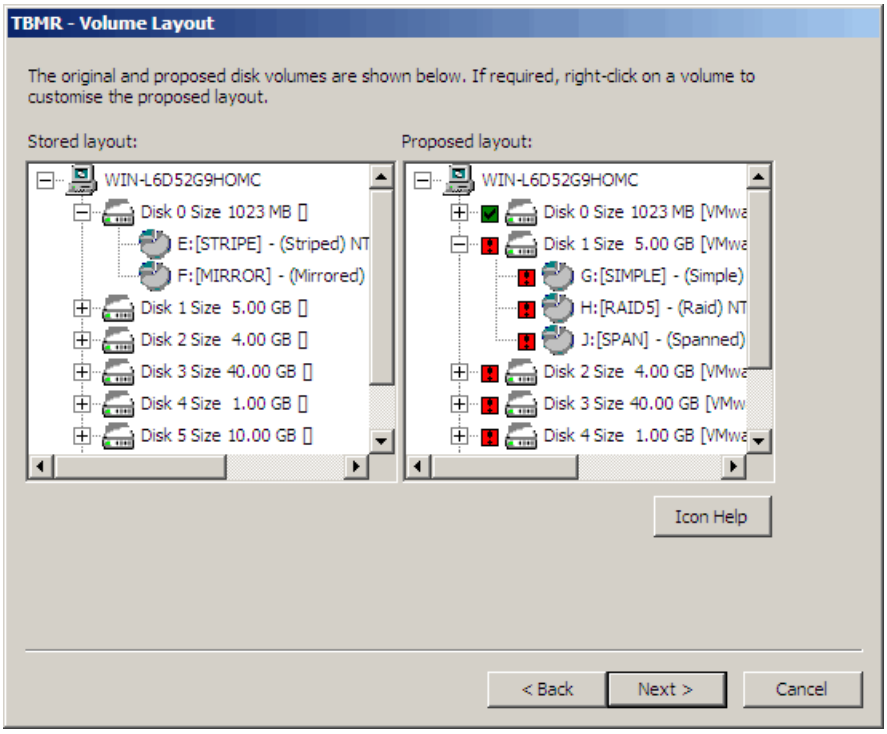
Locate Configuration
Restore From Node

1.2.3.2 Create Partition and Volumes

The next step of the manual recovery process is to configure the target disk **partitions** and **volumes**


TBMR - Welcome
Tivoli.
Welcome to the TBMR Manual Recovery Wizard which gives greater control and flexibility in restoring your system.
Select the operation you want to do and select [Next] to proceed.
Access Configuration
Create Partitions and Volumes
Restore Files
Make Bootable
Dissimilar Hardware
< Back
Next >
Cancel

Select Next> to display the Volume Layout dialogue:


TBMR - Volume Layout
The original and proposed disk volumes are shown below. If required, right-click on a volume to customise the proposed layout.
Stored layout:
Proposed layout:
WIN-L6D52G9HOMC
Disk 0 Size 1023 MB []
E:[STRIPE] - (Striped) NT
F:[MIRROR] - (Mirrored)
Disk 1 Size 5.00 GB []
Disk 2 Size 4.00 GB []
Disk 3 Size 40.00 GB []
Disk 4 Size 1.00 GB []
Disk 5 Size 10.00 GB []
Disk 0 Size 1023 MB [VMwa
Disk 1 Size 5.00 GB [VMwa
G:[SIMPLE] - (Simple)
H:[RAID5] - (Raid) NT
J:[SPAN] - (Spanned)
Disk 2 Size 4.00 GB [VMwa
Disk 3 Size 40.00 GB [VMw
Disk 4 Size 1.00 GB [VMwa
Icon Help
< Back
Next >
Cancel

This screen shows the original disk layout against that of the target system. The target disk layout could be very different to the original. TBMR will attempt to match the disks using its own in-built criteria. Some of the criteria used to judge the match are:

- disk geometry (tracks, cylinders and sectors)
- disk capacity

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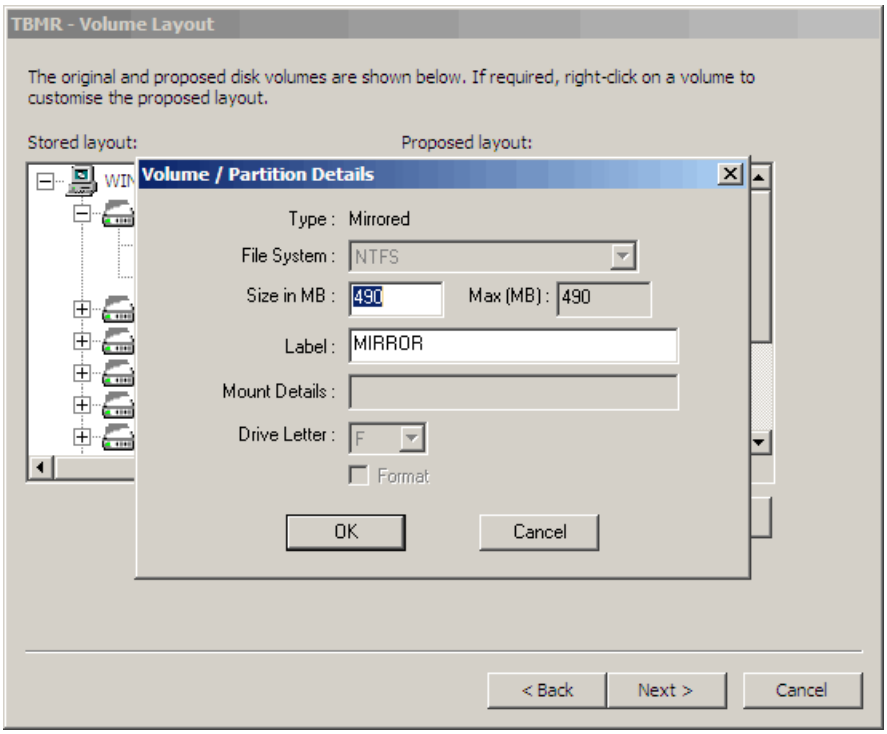
- if currently formatted, the disk signature

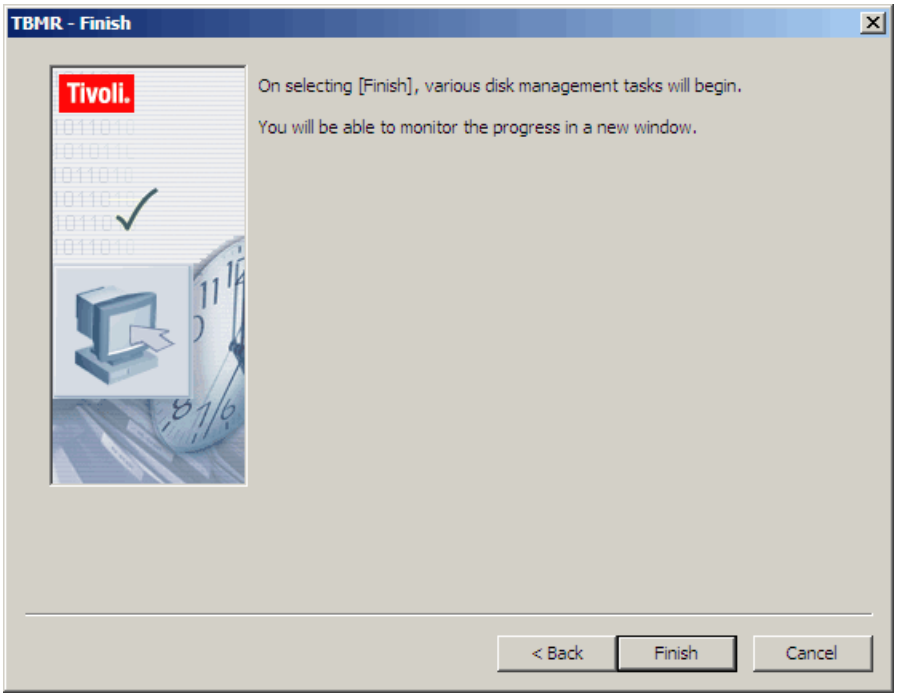
However, it is possible to change the partition size, or opt to tag/untag whether or not a partition should be formatted. To do this, right click on the the disk icon and the following configuration dialogue is displayed:



The indicator shown next to the disk icon indicates whether that disk will be left intact or not. A red exclamation mark indicates that the disk will be re-partitioned and/or formatted. A green tick indicates that the disk will be left intact.

Disks and partitions are discussed in more detail in the Volume Layout section.

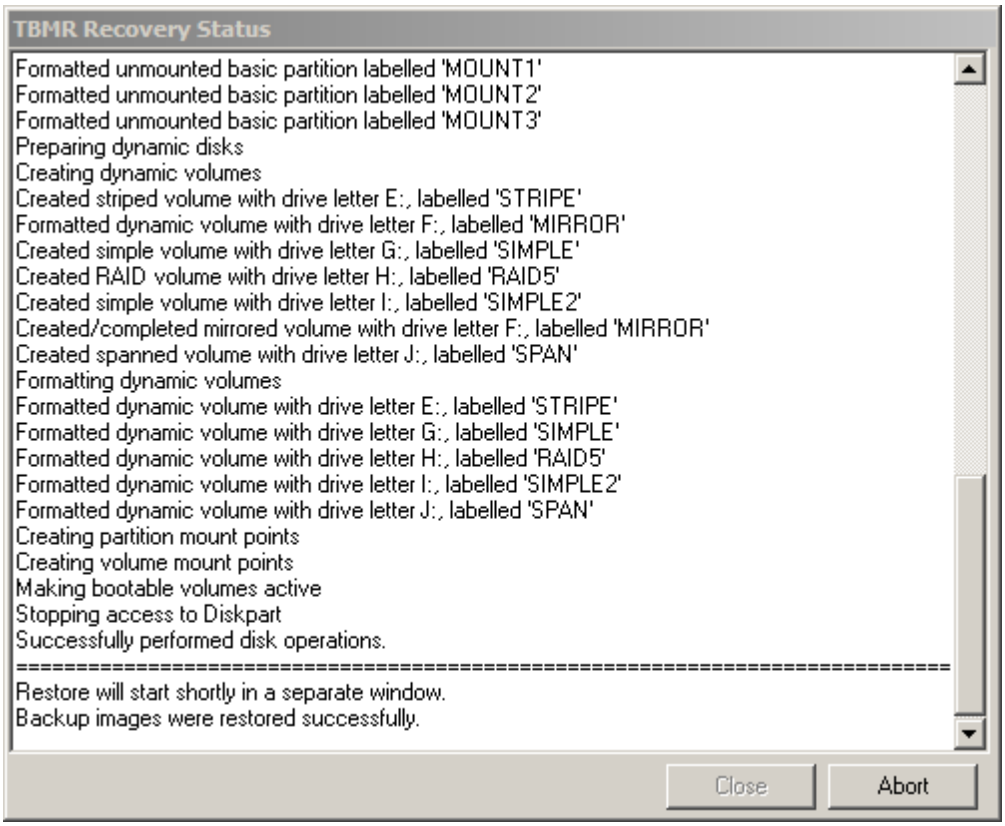
Press <Back to return to the previous step, Finish to commence the active part of this step, or Cancel to abort.


TBMR - Finish
Tivoli.
On selecting [Finish], various disk management tasks will begin.
You will be able to monitor the progress in a new window.
< Back
Finish
Cancel

If you are happy with the recovery configuration, press Finish. This will commence the actual recovery.

Note: this procedure will completely destroy any existing data on the disks selected for recovery. Disks or partitions tagged as 'no format' will be retained.

The **Create Partitions and Volumes** step begins by preparing the disk selected for the recovery.


TBMR Recovery Status
Formatted unmounted basic partition labelled 'MOUNT1'
Formatted unmounted basic partition labelled 'MOUNT2'
Formatted unmounted basic partition labelled 'MOUNT3'
Preparing dynamic disks
Creating dynamic volumes
Created striped volume with drive letter E:, labelled 'STRIPE'
Formatted dynamic volume with drive letter F:, labelled 'MIRROR'
Created simple volume with drive letter G:, labelled 'SIMPLE'
Created RAID volume with drive letter H:, labelled 'RAID5'
Created simple volume with drive letter I:, labelled 'SIMPLE2'
Created/completed mirrored volume with drive letter F:, labelled 'MIRROR'
Created spanned volume with drive letter J:, labelled 'SPAN'
Formatting dynamic volumes
Formatted dynamic volume with drive letter E:, labelled 'STRIPE'
Formatted dynamic volume with drive letter G:, labelled 'SIMPLE'
Formatted dynamic volume with drive letter H:, labelled 'RAID5'
Formatted dynamic volume with drive letter I:, labelled 'SIMPLE2'
Formatted dynamic volume with drive letter J:, labelled 'SPAN'
Creating partition mount points
Creating volume mount points
Making bootable volumes active
Stopping access to Diskpart
Successfully performed disk operations.
Restore will start shortly in a separate window.
Backup images were restored successfully.
Close
Abort

This involves:

- disk mapping original layout to new

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- cleaning (removing any existing disk partitions)
- removing any existing dynamic volume databases
- re-creating the partitions
- converting to dynamic volumes if required
- formatting to the required partition type
- create partition/volume mount points
- make bootable volumes active

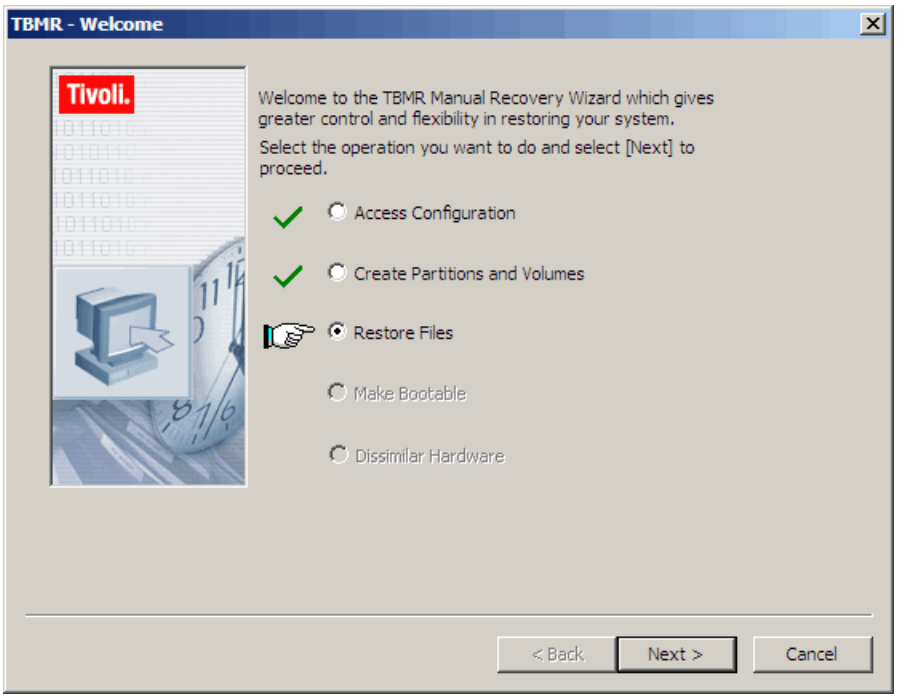
Press Close> to continue with the recovery.

See Also

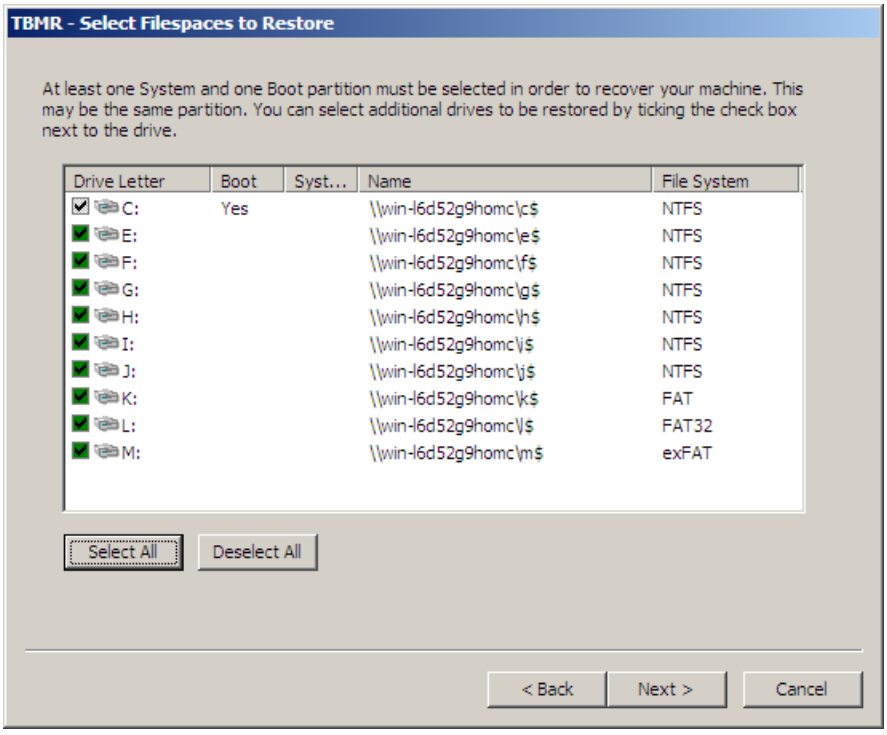
Start Manual Recovery Sequence
Locate Configuration
Restore Files
Make Bootable
Dissimilar Hardware

1.2.3.3 Restore Files

The next step of the manual recovery process is to restore the DR backup files.


TBMR - Welcome
Tivoli.
Welcome to the TBMR Manual Recovery Wizard which gives greater control and flexibility in restoring your system.
Select the operation you want to do and select [Next] to proceed.
Access Configuration
Create Partitions and Volumes
Restore Files
Make Bootable
Dissimilar Hardware
< Back
Next >
Cancel

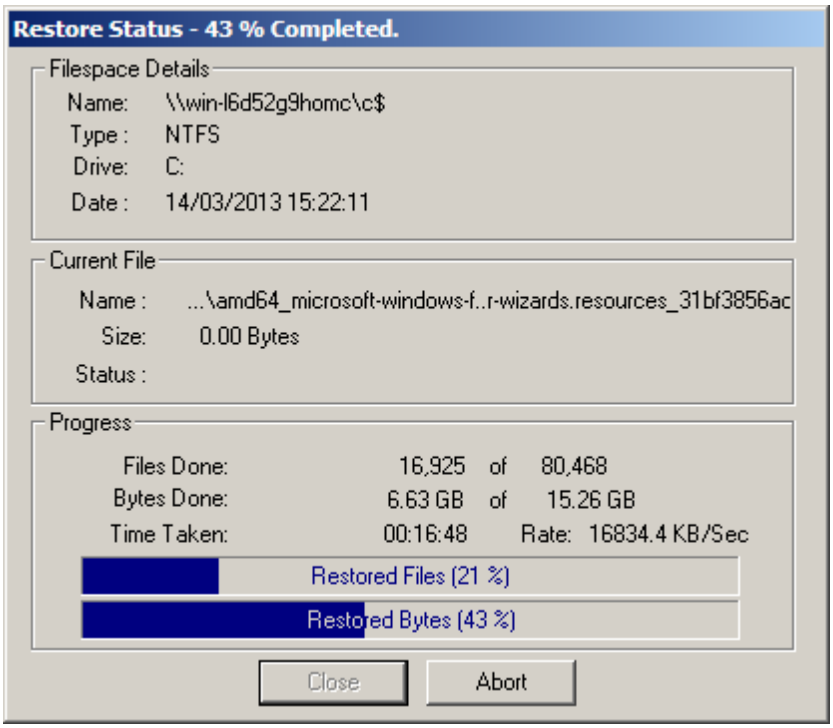
Press Next> to identify the TSM filespaces that should be recovered. Note that the *SystemState* filespace will always be recovered by default.


TBMR - Select Filespaces to Restore
At least one System and one Boot partition must be selected in order to recover your machine. This may be the same partition. You can select additional drives to be restored by ticking the check box next to the drive.
Drive Letter
Boot
Syst...
Name
File System
C: Yes \\win-l6d52g9homc\c$ NTFS
E: \\win-l6d52g9homc\e$ NTFS
F: \\win-l6d52g9homc\f$ NTFS
G: \\win-l6d52g9homc\g$ NTFS
H: \\win-l6d52g9homc\h$ NTFS
I: \\win-l6d52g9homc\i$ NTFS
J: \\win-l6d52g9homc\j$ NTFS
K: \\win-l6d52g9homc\k$ FAT
L: \\win-l6d52g9homc\l$ FAT32
M: \\win-l6d52g9homc\m$ exFAT
Select All
Deselect All
< Back
Next >
Cancel

Press Next> to commence the restore of the TSM filespaces to their target disks/partitions.

Finally, a new window appears containing the restore status of recovered files, with progress bars indicating how much of the backup has been restored. This display also shows the recovery statistics in terms of time, size and throughput.

Note that the recovery is divided into different phases: firstly each volume filespace selected is restored with the *SystemState* filespace restored last.



This process may take some minutes if the backups are large. You may select the Abort button to terminate the file recovery process, but this may leave the disk or partition in an unpredictable state, which may render it unusable.

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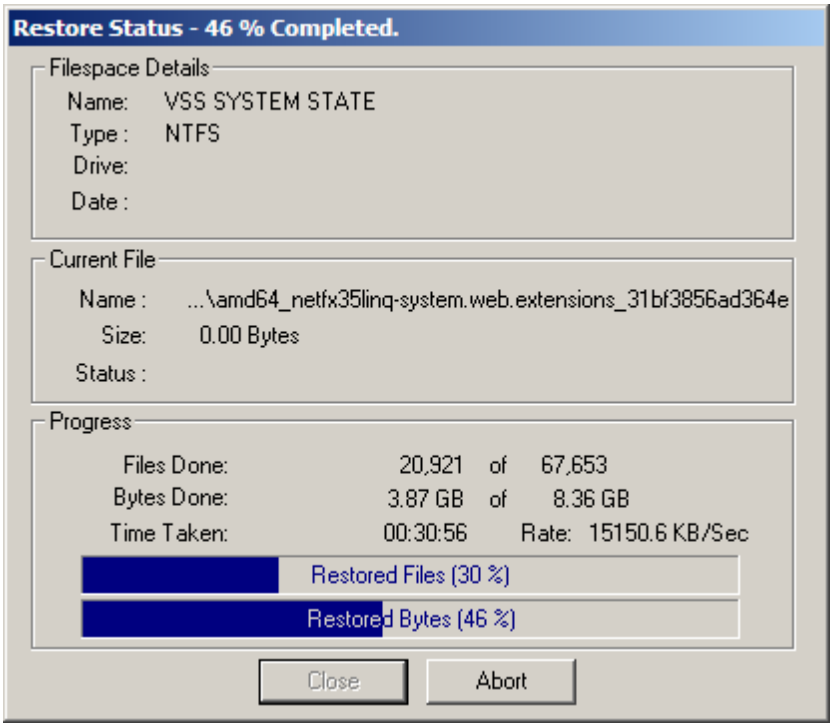
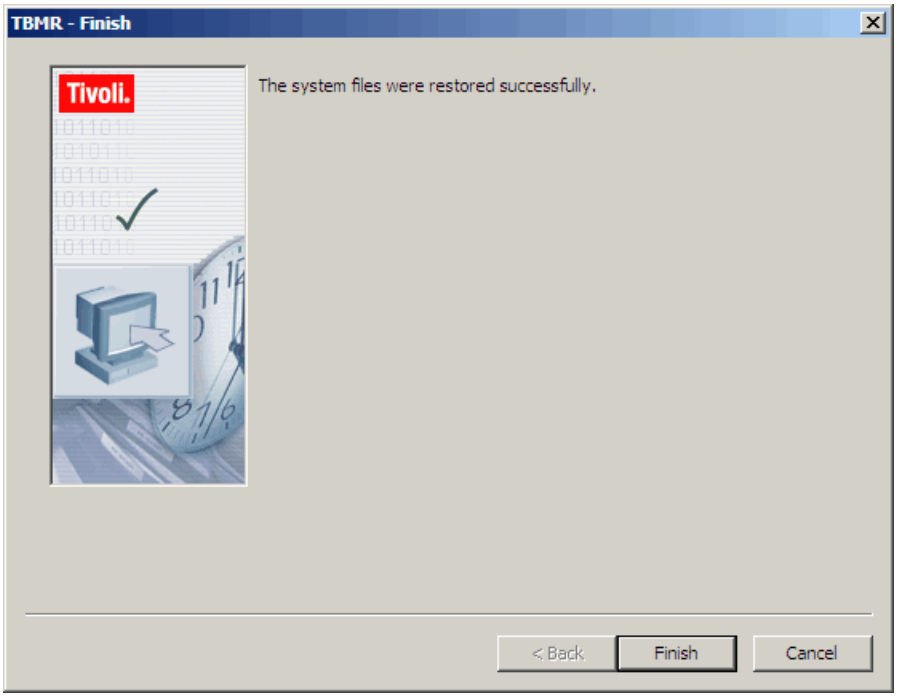


If any errors occur during the recovery, an error message will be shown in the window. Refer to the logs post recovery to establish the cause of any error. When the restore files step completes the following dialogue is displayed:



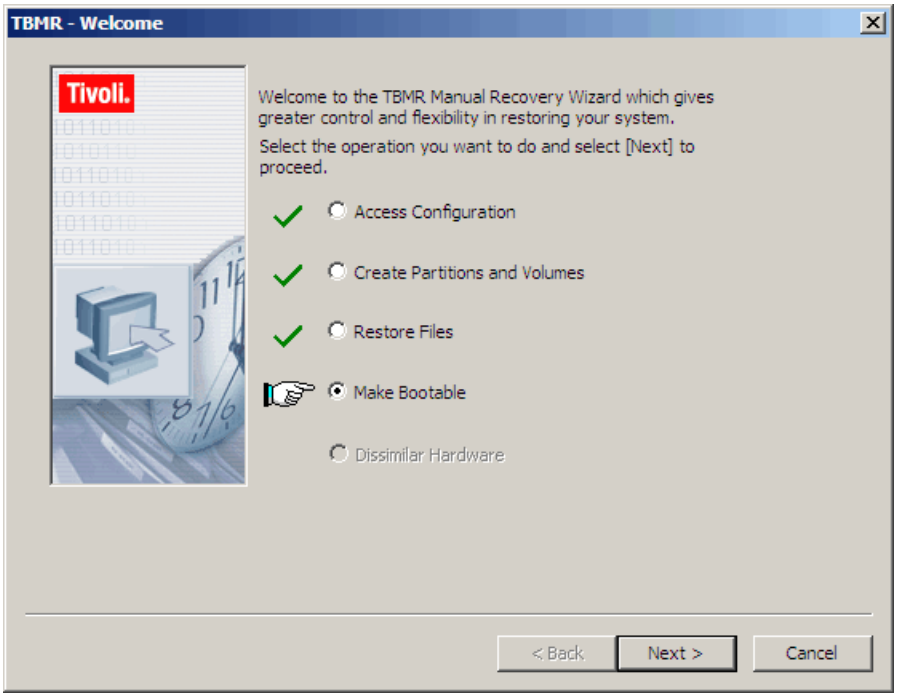
Select Finish and control returns to the next step in the **Manual Recovery** sequence.

See Also

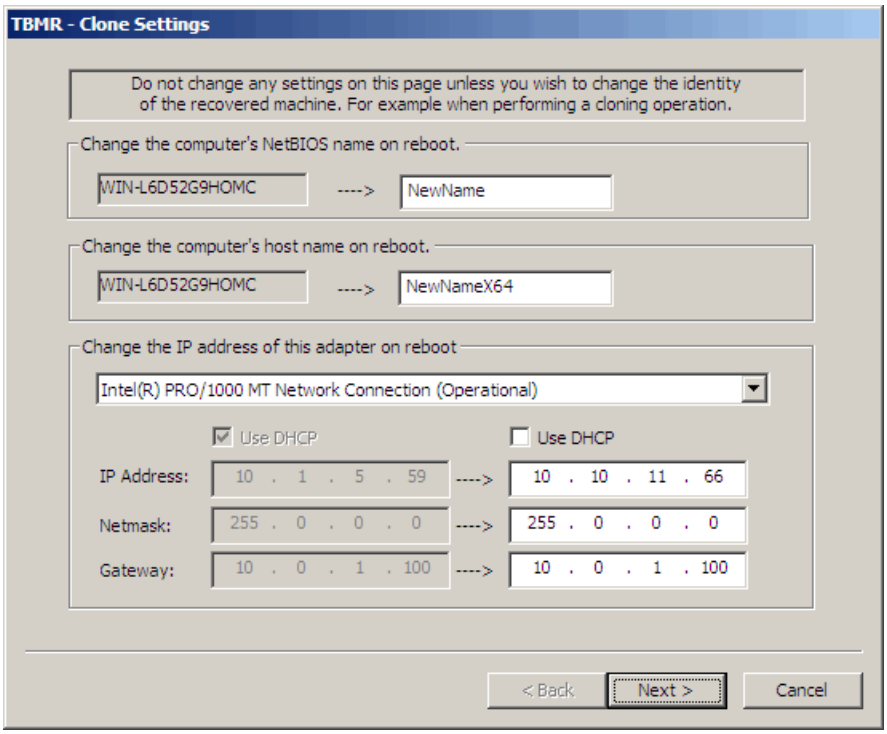
- Start Manual Recovery Sequence
- Locate Configuration
- Create Partition and Volumes
- Make Bootable
- Dissimilar Hardware

1.2.3.4 Make Bootable

The next step in the manual recovery sequence is to make the original disk 'bootable'. This involves re-creating the MBR of the boot disk and modifying the registry with the new disk GUID.


TBMR - Welcome
Tivoli.
Welcome to the TBMR Manual Recovery Wizard which gives greater control and flexibility in restoring your system.
Select the operation you want to do and select [Next] to proceed.
Access Configuration
Create Partitions and Volumes
Restore Files
Make Bootable
Dissimilar Hardware
< Back
Next >
Cancel

Press Next> to commence the **Make Bootable** step. You will now be able to change the hostname and/or the machine's IP addresses on reboot.


TBMR - Clone Settings
Do not change any settings on this page unless you wish to change the identity of the recovered machine. For example when performing a cloning operation.
Change the computer's NetBIOS name on reboot.
WIN-L6D52G9HOMC
---->
NewName
Change the computer's host name on reboot.
WIN-L6D52G9HOMC
---->
NewNameX64
Change the IP address of this adapter on reboot
Intel(R) PRO/1000 MT Network Connection (Operational)
Use DHCP
Use DHCP
IP Address:
10 . 1 . 5 . 59
---->
10 . 10 . 11 . 66
Netmask:
255 . 0 . 0 . 0
---->
255 . 0 . 0 . 0
Gateway:
10 . 0 . 1 . 100
---->
10 . 0 . 1 . 100
< Back
Next >
Cancel

If no hostname or IP change is required, click Next> to continue. The cloning data is confirmed with

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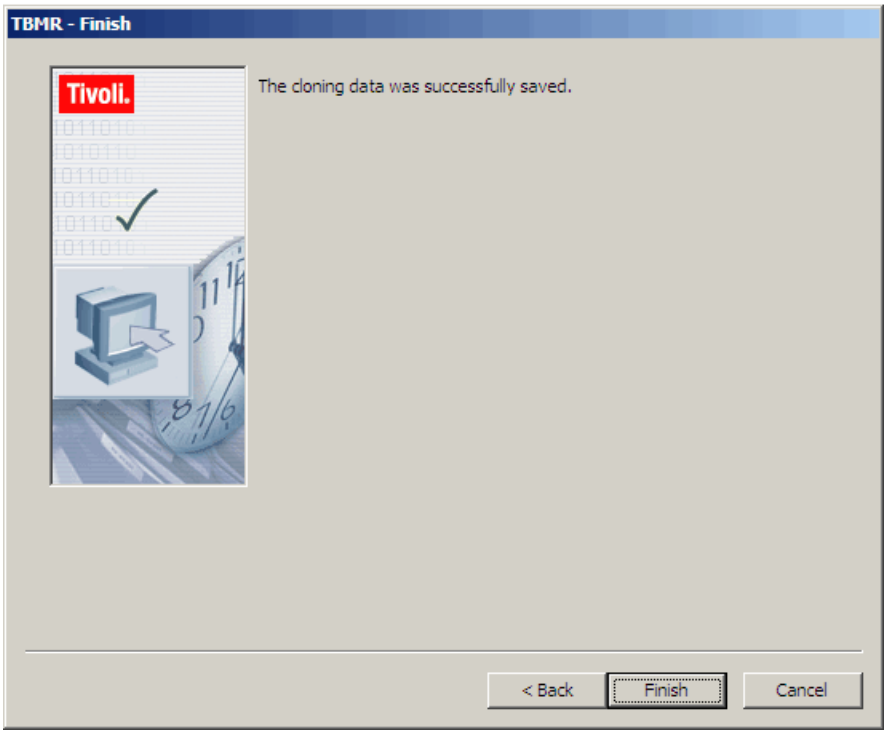
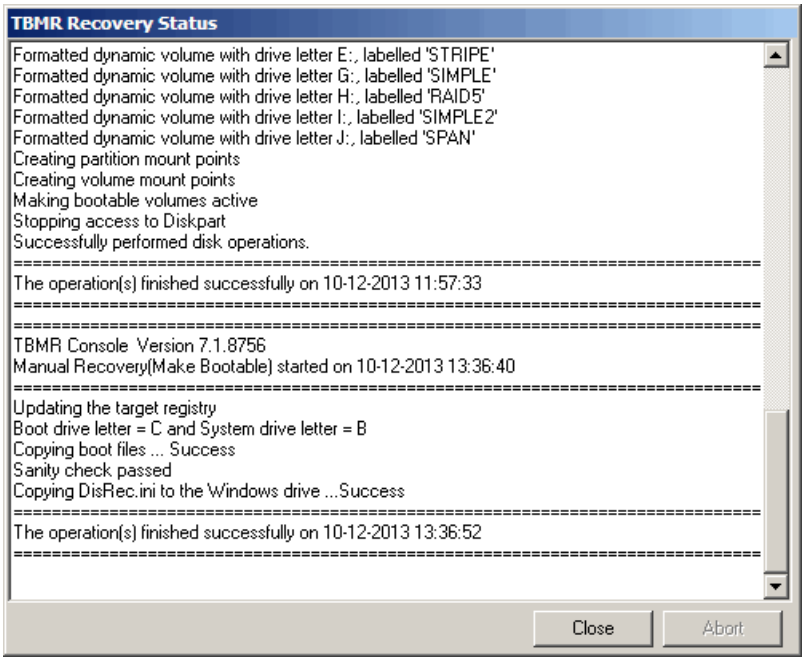
the following dialogue.



Click Finish to complete the Make Bootable step.

A new dialogue window opens summarising the success or failure of the operation:


TBMR Recovery Status
Formatted dynamic volume with drive letter E:, labelled 'STRIPE'
Formatted dynamic volume with drive letter G:, labelled 'SIMPLE'
Formatted dynamic volume with drive letter H:, labelled 'RAID5'
Formatted dynamic volume with drive letter I:, labelled 'SIMPLE2'
Formatted dynamic volume with drive letter J:, labelled 'SPAN'
Creating partition mount points
Creating volume mount points
Making bootable volumes active
Stopping access to Diskpart
Successfully performed disk operations.
The operation(s) finished successfully on 10-12-2013 11:57:33
TBMR Console Version 7.1.8756
Manual Recovery(Make Bootable) started on 10-12-2013 13:36:40
Updating the target registry
Boot drive letter = C and System drive letter = B
Copying boot files ... Success
Sanity check passed
Copying DisRec.ini to the Windows drive ...Success
The operation(s) finished successfully on 10-12-2013 13:36:52
Close
Abort

Press Close to complete the step and return to the **Manual Recovery Wizard**.

See Also

Start Manual Recovery Sequence
Locate Configuration
Create Partition and Volumes
Restore Files

Dissimilar Hardware

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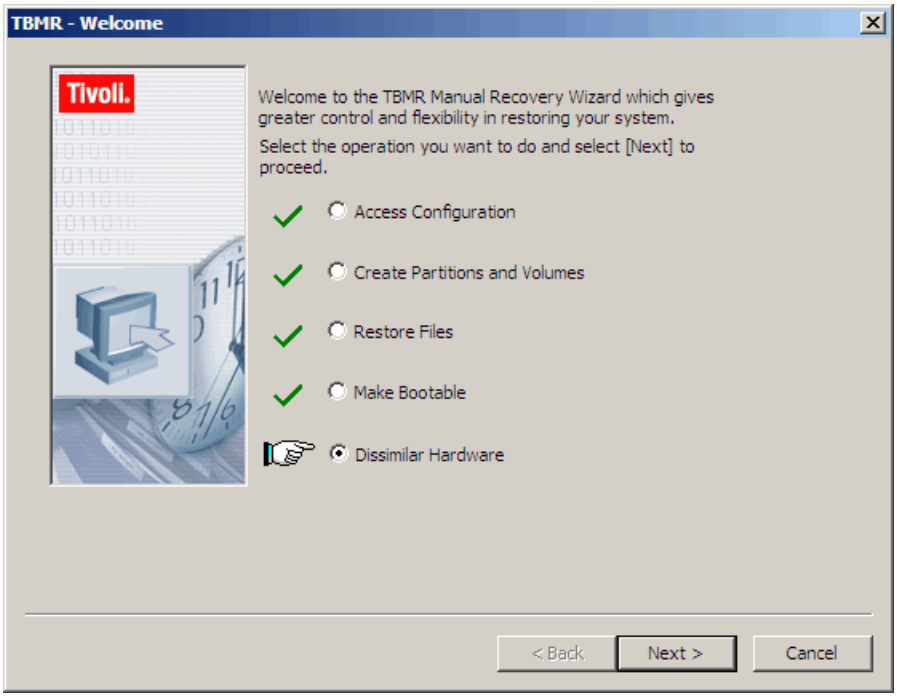
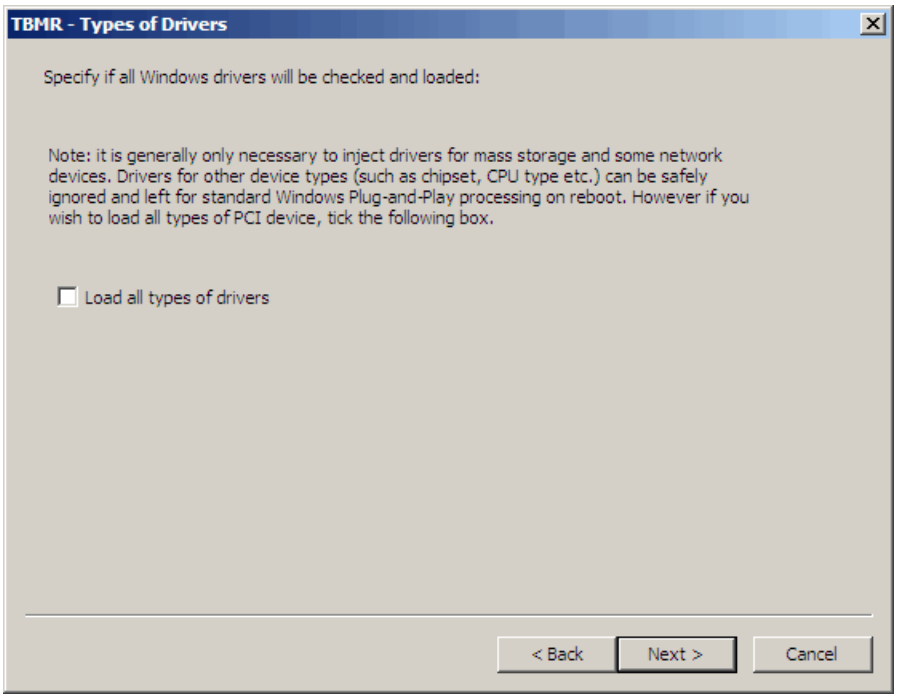
1.2.3.5 Dissimilar Hardware

The final step in the manual DR sequence is to check if the recovery is to **Dissimilar Hardware**.

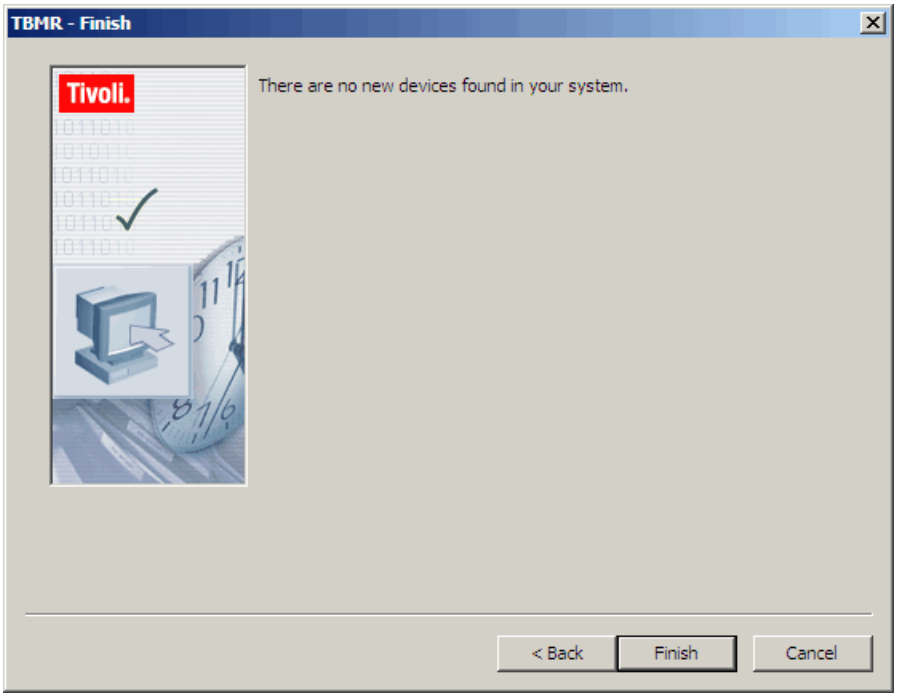

TBMR - Welcome
Tivoli.
Welcome to the TBMR Manual Recovery Wizard which gives greater control and flexibility in restoring your system.
Select the operation you want to do and select [Next] to proceed.
Access Configuration
Create Partitions and Volumes
Restore Files
Make Bootable
Dissimilar Hardware
< Back
Next >
Cancel

This is determined by comparing the drivers currently in use by Windows WinPE 2 or WinPE 4 and the drivers listed in the recovered machine's registry.

The step first prompts for what driver types should be checked. By default, only **Mass Storage** (disk) and **network devices** are checked.


TBMR - Types of Drivers
Specify if all Windows drivers will be checked and loaded:
Note: it is generally only necessary to inject drivers for mass storage and some network devices. Drivers for other device types (such as chipset, CPU type etc.) can be safely ignored and left for standard Windows Plug-and-Play processing on reboot. However if you wish to load all types of PCI device, tick the following box.
Load all types of drivers
< Back
Next >
Cancel

Press Next> to continue. For recovery to similar hardware, no new devices will be found and this will be confirmed by this dialogue:



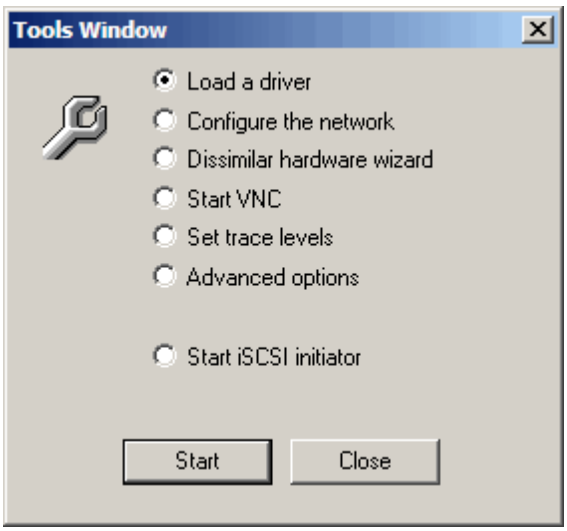
Press Finish to complete the manual recovery sequence.

See Also

Start Manual Recovery Sequence
Locate Configuration
Create Partition and Volumes
Restore Files
Make Bootable

1.2.4 Tools

There are a number of tools that can assist with the recovery process. They are all collected under this command button:



The options available are:

- Load a driver

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- Configure the network
- Dissimilar Hardware Wizard
- Start VNC
- Set trace levels
- Advanced options
- Start iSCSI initiator

Load a driver allows a new mass storage or NIC driver to be injected into the running booted WinPE 2 or WinPE 4 DR environment. This would be used, for example, to support a mass-storage (disk) device not currently supported out-of-box. This should be done prior to starting the DR sequence.

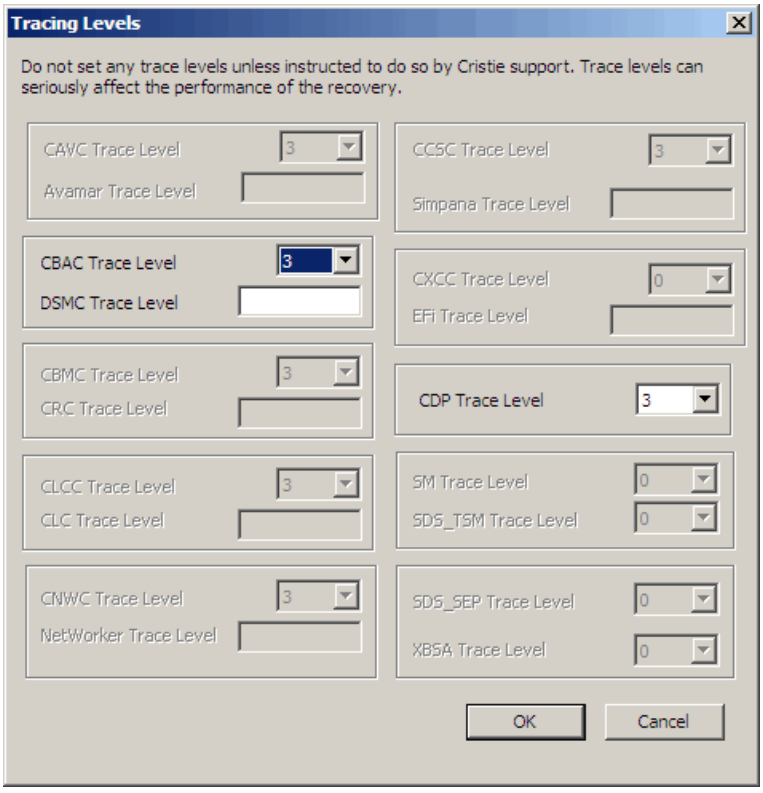
Selecting **Configure the network** will start the **Cristie Network Configurator** tool. This provides extensive facilities to configure networks during the DR process.

The **Dissimilar Hardware Wizard** will allow drivers to be injected into the recovered system when the target hardware has different devices from the original (eg. RAID controllers). Normally, this will be done automatically as part of the DR sequence and will not need to be run manually.

Start VNC will run a VNC server within the WinPE 2 or WinPE 4 environment, allowing external VNC clients to remotely connect during the DR session. The start process will provide you with the current IP address of the WinPE 2 or WinPE 4 environment, which you will need to specify in the VNC client.

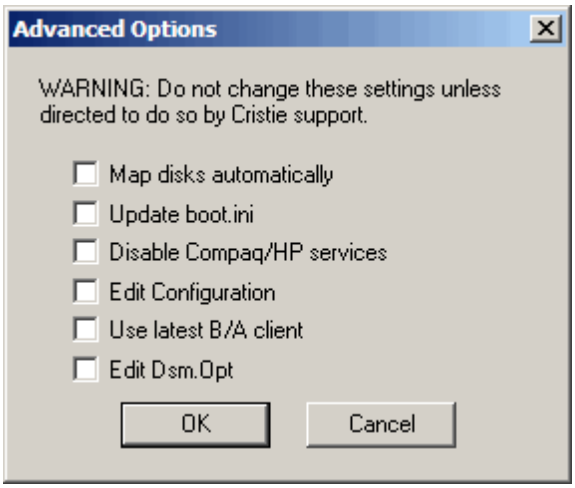
Note: the VNC connection is also password protected. The VNC feature is intended for diagnosing DR problems under the guidance of Cristie Support, who will provide the password upon request.

Set trace levels allows the DR log file trace to be increased or decreased as required:



It is recommended that the trace levels are only changed when advised to do so by Cristie Support staff. This is because they could have a severe impact upon the performance of the backup restore process.

Advanced Options should only be selected when advised to do so by Cristie Support staff.



Start iSCSI initiator - please contact Cristie Support if you wish to use this feature.

In This Section

Cristie Network Configurator Tool
Dissimilar Hardware Wizard
Load a Driver

1.2.4.1 Cristie Network Configurator Tool

The **Cristie Network Configurator** tool provides extensive facilities to configure the network during the recovery process. It offers the following features:

- supports multiple NICs
- configure individual NIC parameters for duplex mode and link speed
- the ability to select DHCP allocated or static IP addresses
- the ability to setup DNS server IP addresses
- the ability to setup the Network Identification of the recovering system
- allow file shares to be set on the recovering system
- map/unmap network drives

Select the

button at the top of the dialogue to show Network Configurator online help.

In This Section

Configure NIC Parameters
Assign Static or DHCP IP Settings
Map a Network Drive
Disconnect Network Drives
Setup DNS Servers
Setup Network Identification
Display MAC Address

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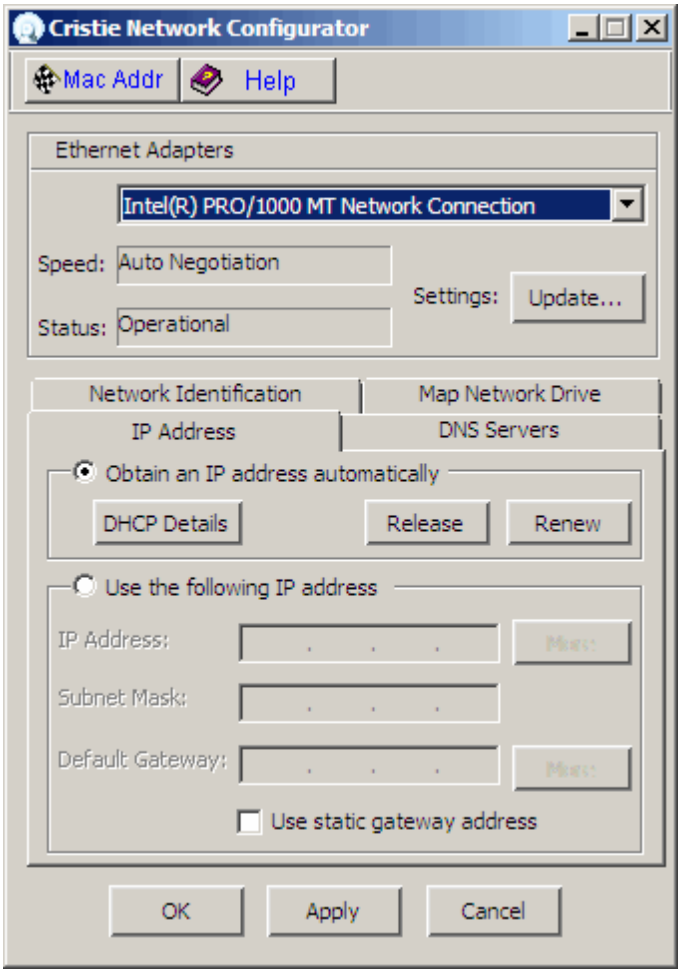
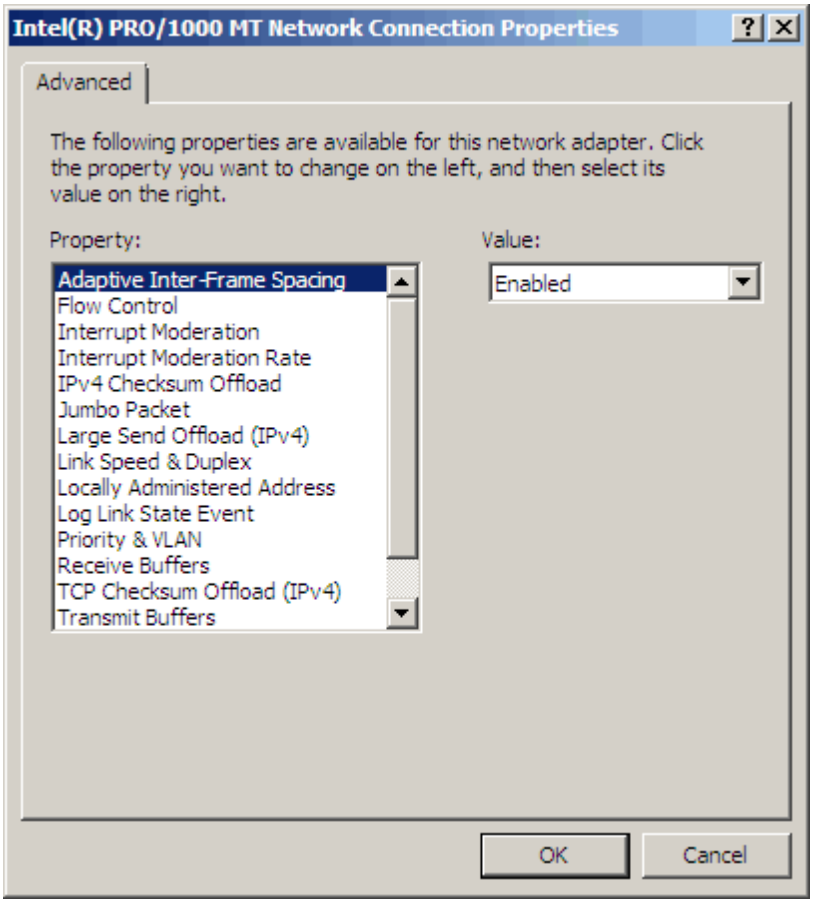
Configure NIC Parameters

It is possible to change both the link speed and duplex mode for any NIC detected on the recovering target system. Select the desired NIC (there could be more than one) from the drop down box and then select Update....



The resulting display offers numerous NIC properties that can be changed. This property list is dependent upon the NIC - ie. not all properties will be available for all NICs.



To change the NIC speed or duplex setting, select the corresponding *Property* from the dialogue and then select the required value from the *Value* drop down box as shown below:

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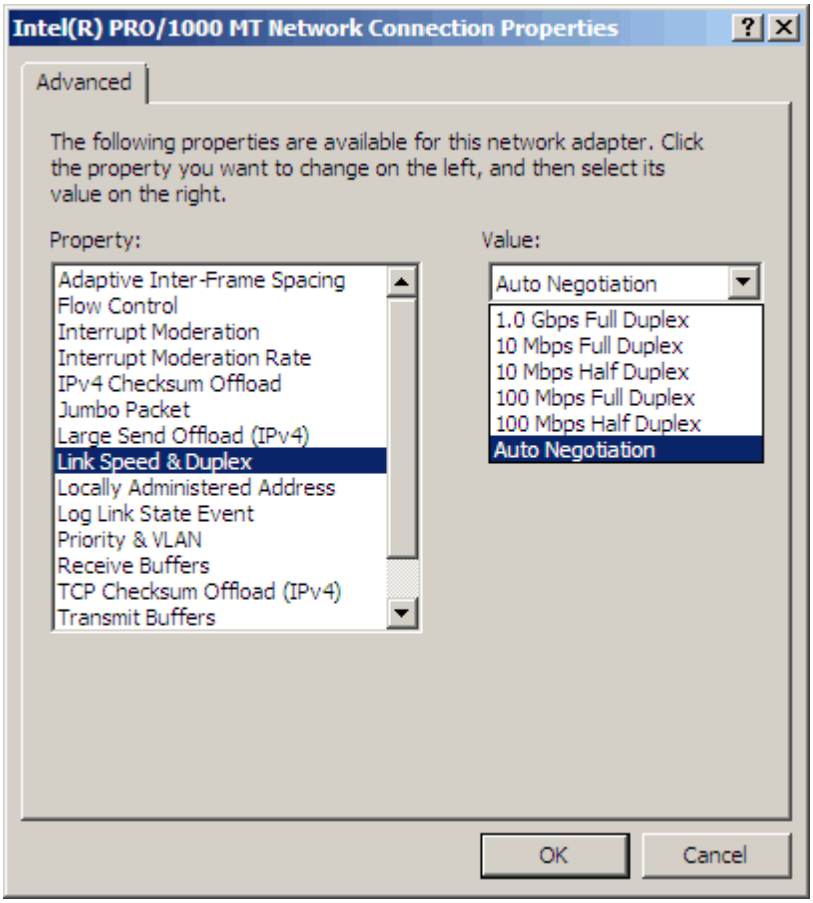


Again, note that the speed/duplex settings available are NIC dependent. *Auto Negotiation* is generally the NIC default setting. Other NIC properties may be changed as required.

If the NIC is currently connected to the network then the *Status* will be shown as **Operational**. Otherwise the NIC is considered to be **Non-Operational**.

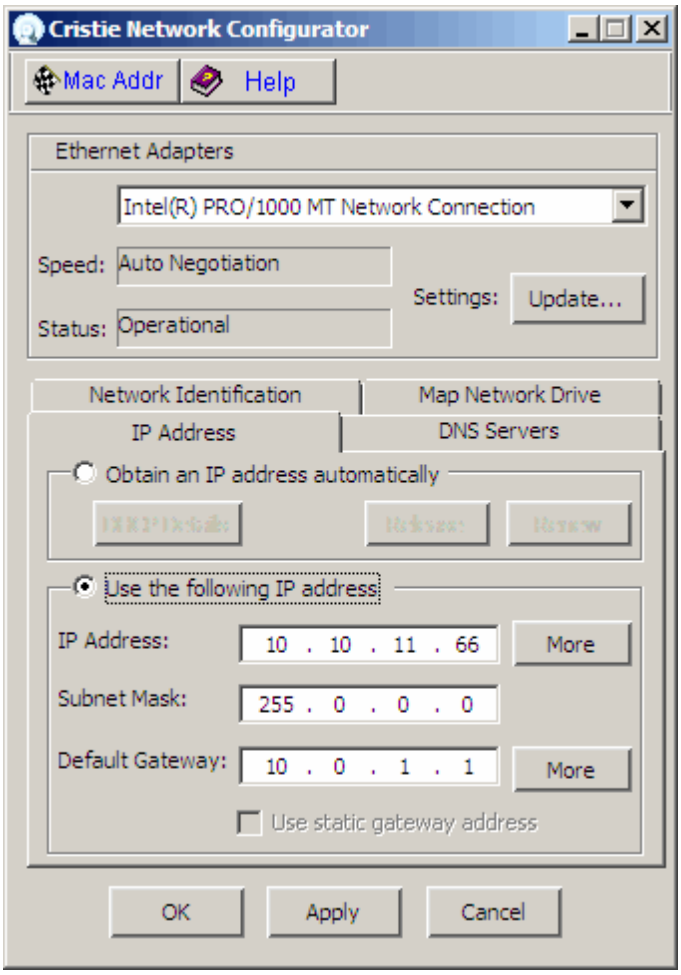
See Also

- Cristie Network Configurator Tool
- Assign Static or DHCP IP Settings
- Map a Network Drive
- Disconnect Network Drives
- Setup DNS Servers
- Setup Network Identification
- Display MAC Address

Assign Static or DHCP IP Settings

Normally the WinPE 2 or WinPE 4 DR environment will start with DHCP enabled and active. However, if a static IP is required, use the 'Use the following IP address' option to manually configure.

First ensure the desired network adapter is selected from the drop down list. If a static IP address is to be applied, select the 'Use the following IP address' button. This will automatically deselect the default DHCP option and allow the static IP parameters to be defined.



Set the new IP address, subnet mask and gateway IP address. The More button will allow the system to have more than one static IP address. Click on Apply to confirm the settings for the selected adapter.

This feature will also allow the DHCP lease to be released or renewed, as required.

See Also

- Cristie Network Configurator Tool
- Configure NIC Parameters
- Map a Network Drive
- Disconnect Network Drives
- Setup DNS Servers
- Setup Network Identification
- Display MAC Address

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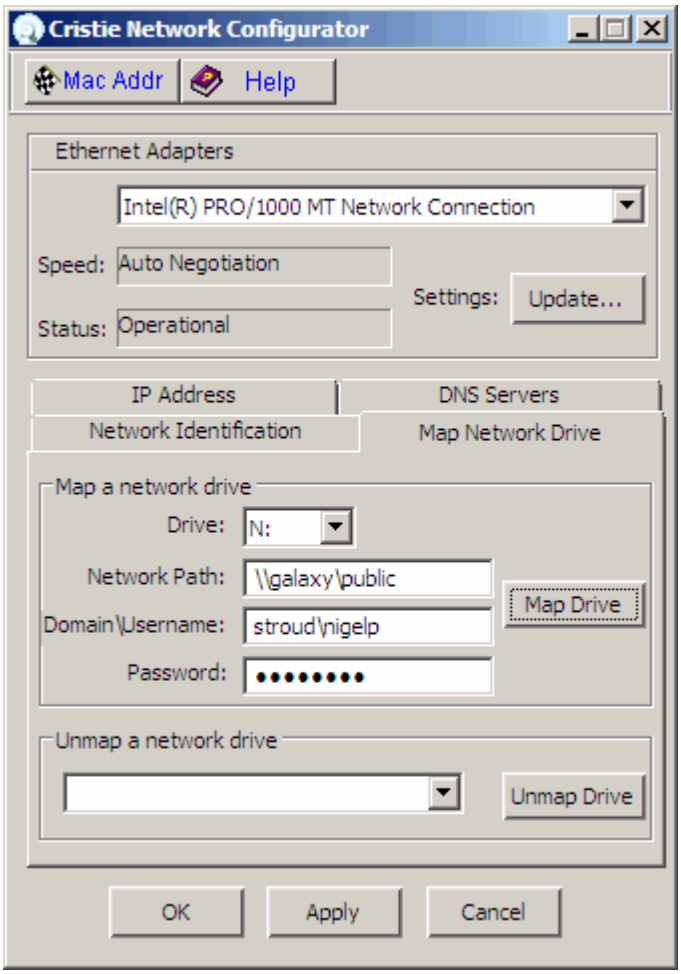
Map a Network Drive

In order to simplify access to network resources, the Network Configurator allows you to map a network drive to a network share. Start the Cristie Network Configurator from the **Tools** menu and select the **Map Network Drive** tab.



Select the drive letter that you wish to allocate from the **Drive** drop-down box and type in the share name that you wish to associate with it. Also specify the network credentials to be used to access the share.

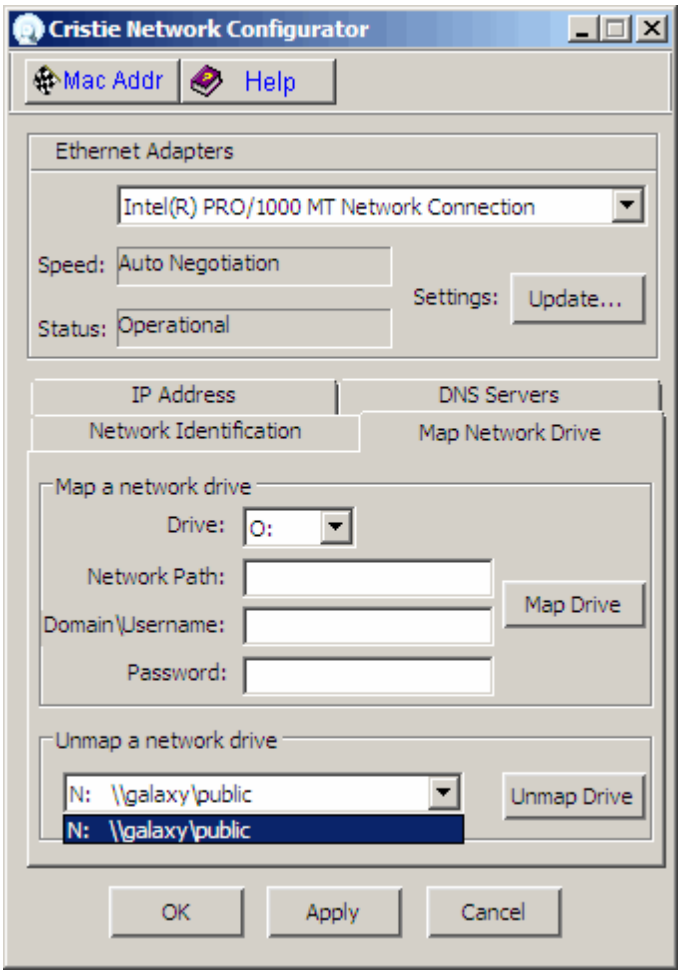
Press Map Drive to confirm the share operation. If successful, the share will be added to the **Unmap a network drive** drop down list.

See Also

- Cristie Network Configurator Tool
- Configure NIC Parameters
- Assign Static or DHCP IP Settings
- Disconnect Network Drives
- Setup DNS Servers
- Setup Network Identification
- Display MAC Address

Unmap a Network Drive

If you need to disconnect a mapped drive for any reason, this option allows you to do this. Just select the drive that you wish to disconnect from the Unmap a network drive drop down list and then click Unmap Drive.



The mapped drive is removed from the list to confirm the operation.

See Also

- Cristie Network Configurator Tool
- Configure NIC Parameters
- Assign Static or DHCP IP Settings
- Map a Network Drive
- Setup DNS Servers
- Setup Network Identification
- Display MAC Address

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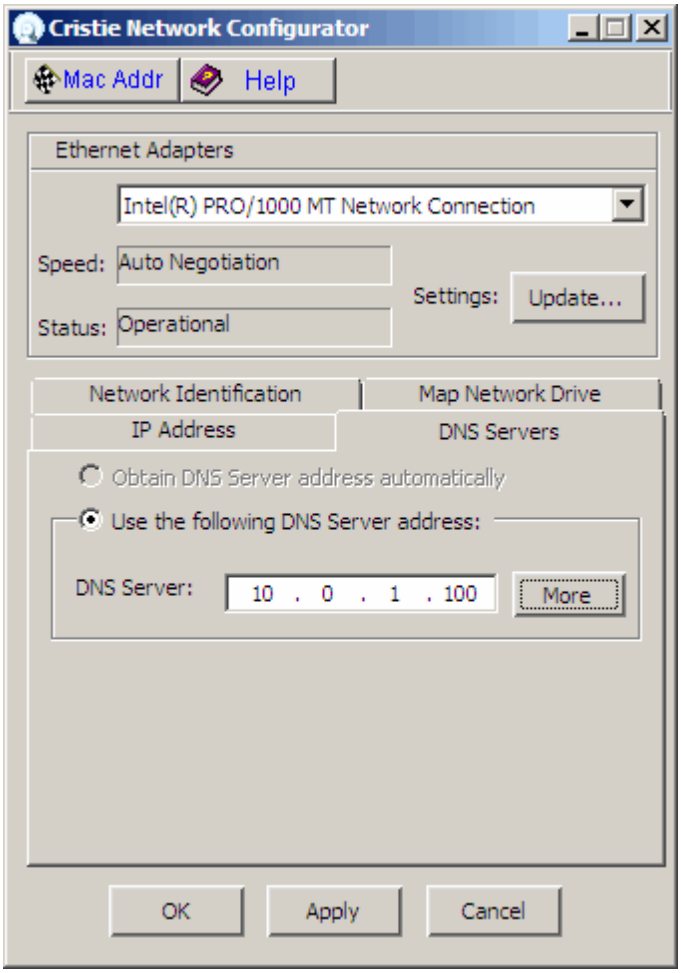
Setup DNS Servers

DNS server IP addresses are automatically set when the WinPE 2 or WinPE 4 DR environment boots. However, options are provided to allow DNS server IP addresses to be manually set if required.

Note: WINS servers are not currently supported by this tool.



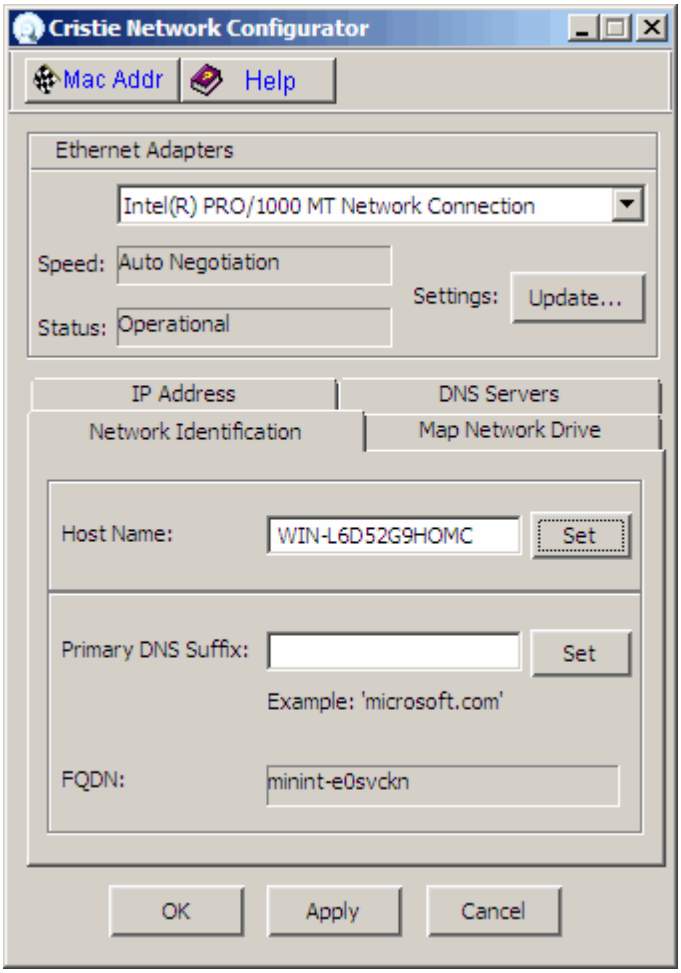
Select the **'Use the following DNS Server address'** radio button and enter the new DNS IP server address. If required, select the More button to add several DNS IP addresses. Press Apply to activate the new address.

See Also

- Cristie Network Configurator Tool
- Configure NIC Parameters
- Assign Static or DHCP IP Settings
- Map a Network Drive
- Disconnect Network Drives
- Setup Network Identification
- Display MAC Address

Setup Network Identification

Click the **Network Identification** tab to setup a new hostname for the recovering system. This allows the WinPE 2 or WinPE 4 hostname and Primary DNS suffix to be changed during a DR session if required. These details are transient and only apply only while theWinPE 2 or WinPE 4 DR session is running. They are not applied to the recovered system when it reboots after the DR session.



Enter the new Computer Name and press Set to confirm the change.

See Also

- Cristie Network Configurator Tool
- Configure NIC Parameters
- Assign Static or DHCP IP Settings
- Map a Network Drive
- Disconnect Network Drives
- Setup DNS Servers
- Display MAC Address

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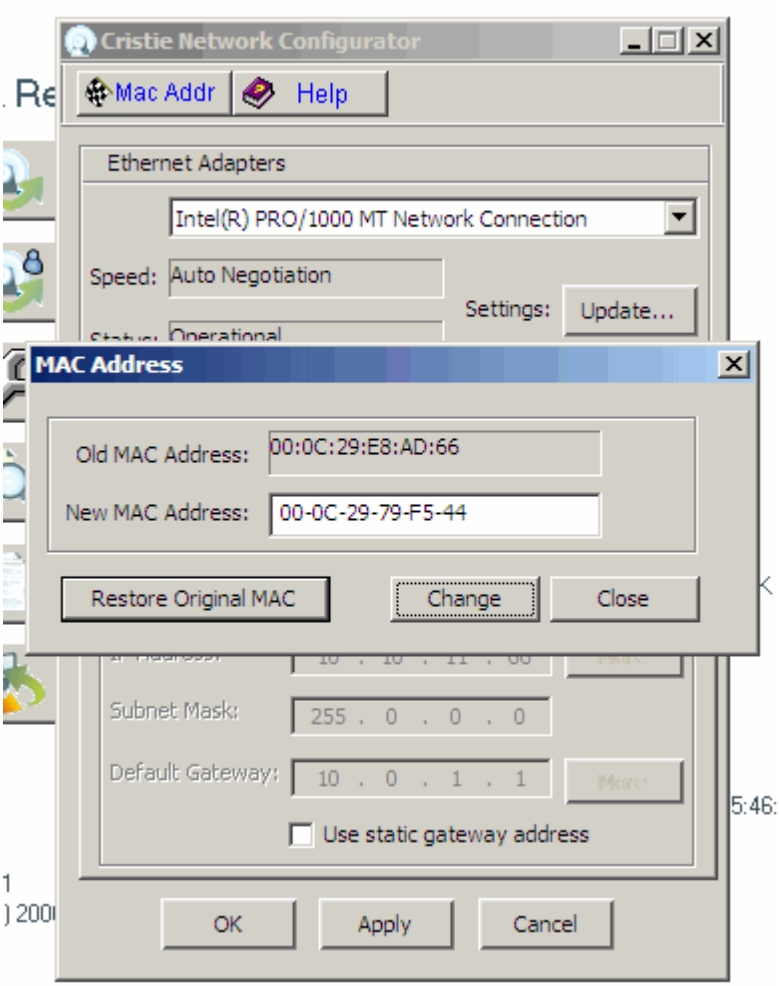
Display/Change MAC Address

It is possible to display and change the local MAC address of the recovering system. Select the MAC Address

button at the top of the Main menu dialogue:



Change the MAC address by entering a new value in the form xx-xx-xx-xx-xx-xx and selecting Change. The original MAC address will be preserved and can be restored using the Restore Original MAC button.

See Also

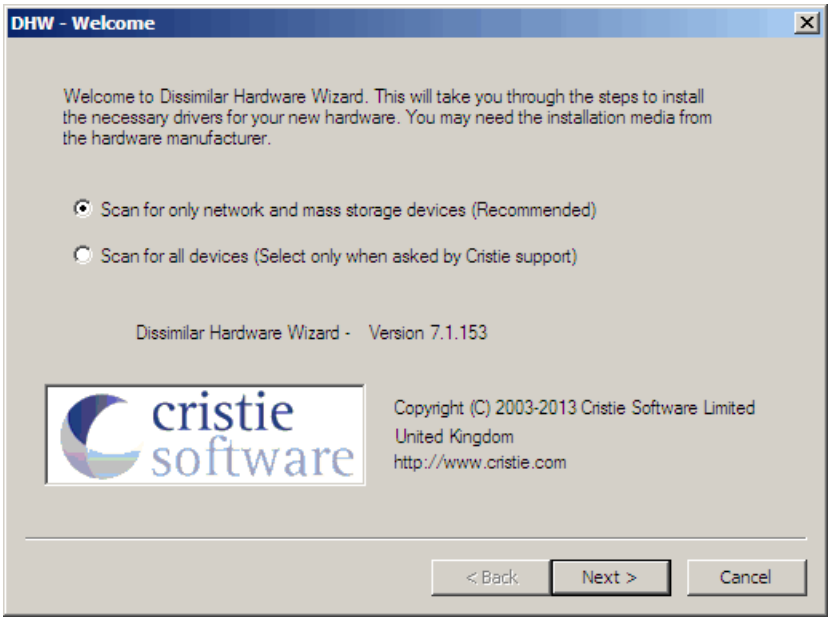
- Cristie Network Configurator Tool
- Configure NIC Parameters
- Assign Static or DHCP IP Settings
- Map a Network Drive
- Disconnect Network Drives
- Setup DNS Servers
- Setup Network Identification

1.2.4.2 Dissimilar Hardware Wizard

A restore to dissimilar hardware is normally detected during the Automatic or Manual DR sequence. Drivers will be injected automatically at the end of the restore sequence if a source location has been provided. However, if this process has failed for some reason, or additional drivers are required to be injected into the recovering machine, then this **Dissimilar Hardware Wizard** (DHW) tool is provided.

Note: it is only necessary to load the drivers for the hard disk, NIC and, rarely, the HAL. Drivers for the hard disks and NIC can be determined by Plug-and-Play (PnP) and may be readily identified. However, changes required in the CPU model via a change in HAL cannot yet be determined by PnP - these need to be loaded manually.

If you wish to scan for just Mass Storage and Network devices (the minimum required to boot a dissimilar system), select Next> to continue to the next step of the Wizard. This is the recommended option. Under the guidance of **Cristie Support**, you may be asked to scan for all devices. In this case, tick the **'Scan for all devices'** box before selecting Next>.


DHW - Welcome
Welcome to Dissimilar Hardware Wizard. This will take you through the steps to install the necessary drivers for your new hardware. You may need the installation media from the hardware manufacturer.
Scan for only network and mass storage devices (Recommended)
Scan for all devices (Select only when asked by Cristie support)
Dissimilar Hardware Wizard - Version 7.1.153
cristie software
Copyright (C) 2003-2013 Cristie Software Limited
United Kingdom
http://www.cristie.com
< Back
Next >
Cancel

Select the **'Install Drivers using Plug-and-Play'** option:

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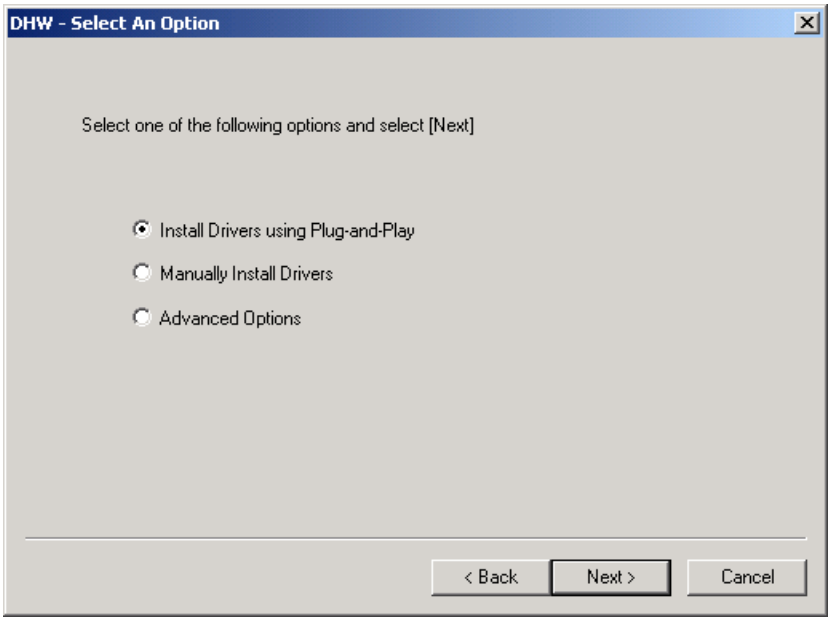
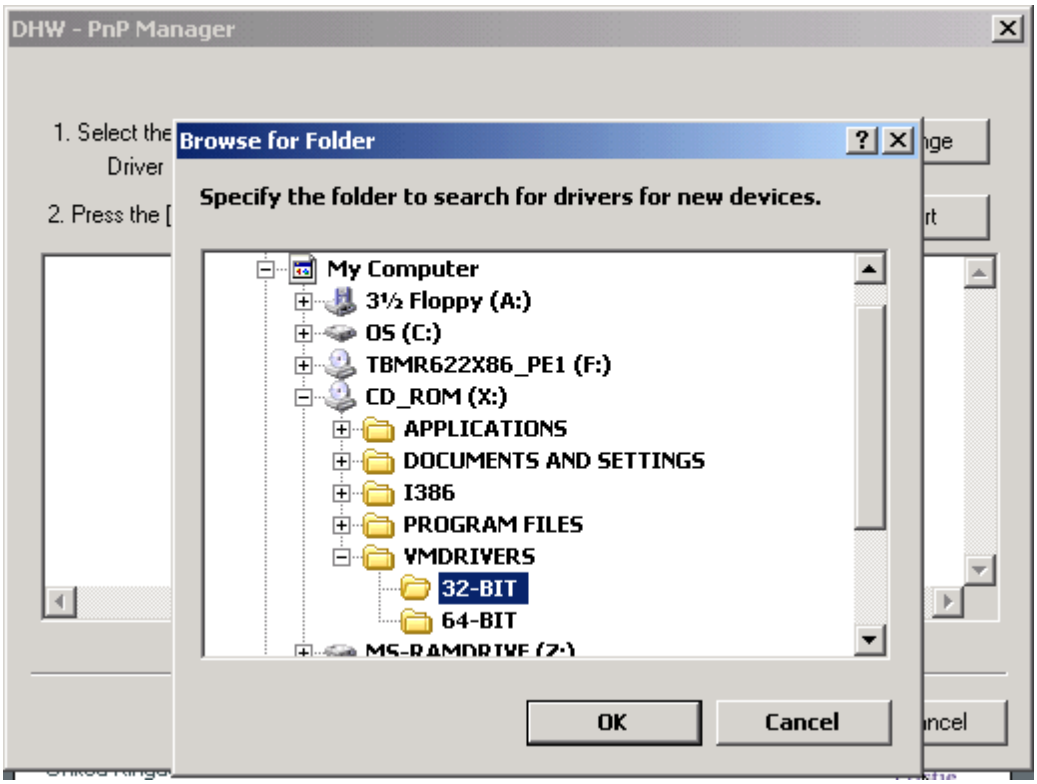
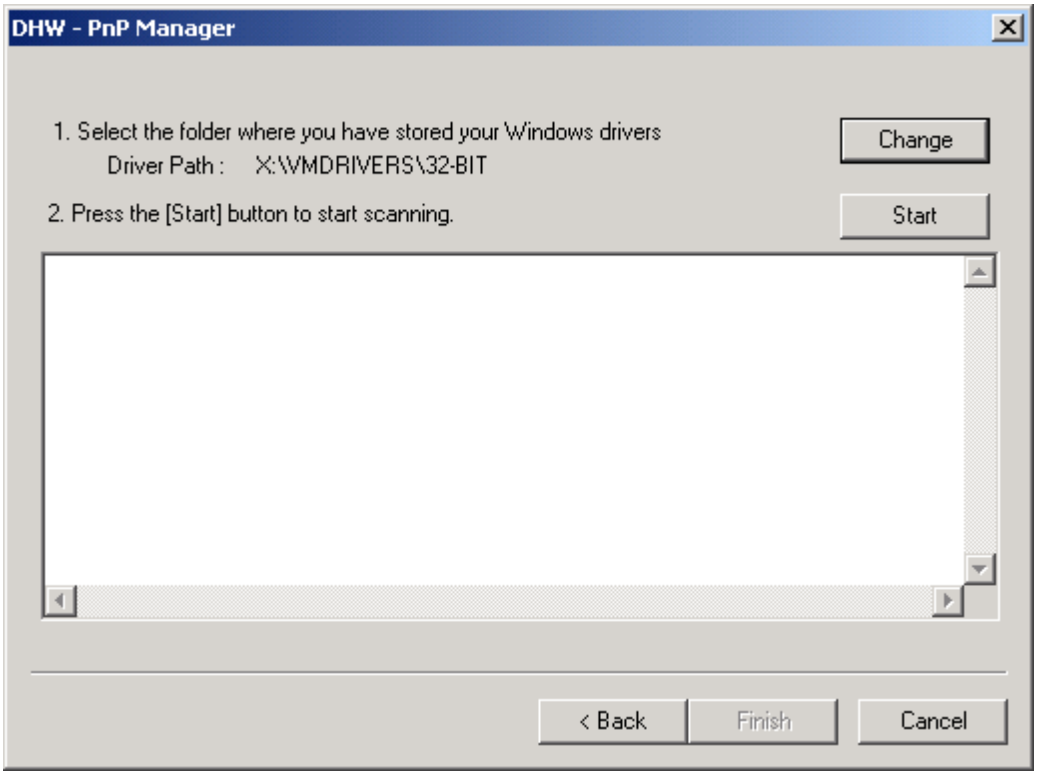

DHW - Select An Option
Select one of the following options and select [Next]
Install Drivers using Plug-and-Play
Manually Install Drivers
Advanced Options
< Back
Next >
Cancel

Install Drivers using Plug-and-Play

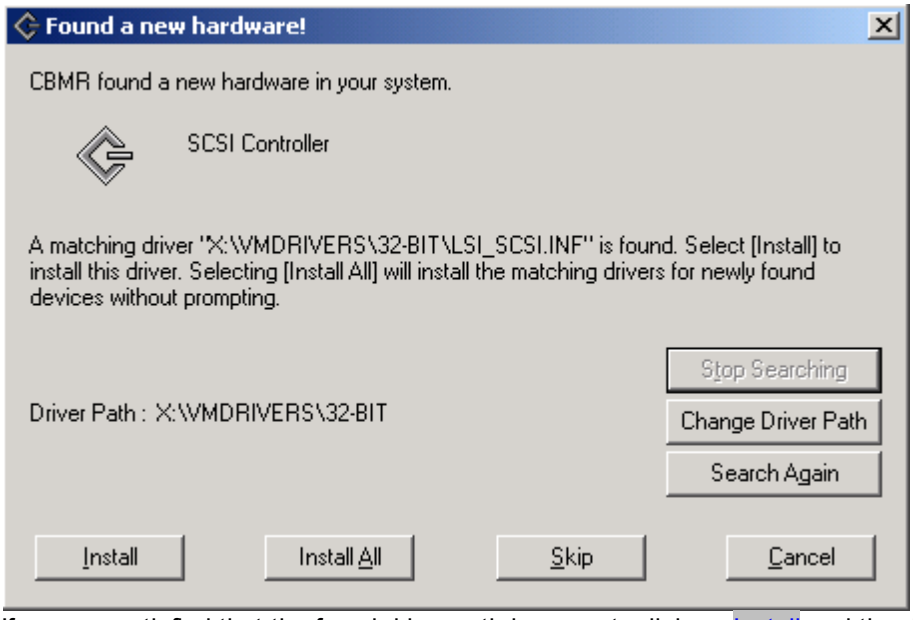
The window appears empty to start with. The set of drivers located on the recovery CD is the default choice, but in practice they should not be used. Instead, change the driver search path to where you have actually located your drivers (for example, to a network share or another CD) with the **Change** command button.



In the example above, the driver search path is changed to the VMware drivers on the WinPE boot CD. Begin the PnP driver detection by clicking Start.



The process checks the devices that it can detect and when it finds one that does not have a driver loaded, it will offer to install it. The example below shows an LSI SCSI device being detected:


Found a new hardware!
CBMR found a new hardware in your system.
SCSI Controller
A matching driver "X:\VMDRIVERS\32-BIT\LSI_SCSI.INF" is found. Select [Install] to install this driver. Selecting [Install All] will install the matching drivers for newly found devices without prompting.
Stop Searching
Driver Path : X:\VMDRIVERS\32-BIT
Change Driver Path
Search Again
Install
Install All
Skip
Cancel

If you are satisfied that the found driver path is correct, click on Install and the driver will be installed. The device scan will continue and may find, for example, other mass storage or network devices. Follow the steps above to install.

Drivers are usually .sys files. The .inf files define which driver files need to be loaded for a given device. You may need to confirm the location of the driver files for each device, or possibly find the path where they are stored. When you have the correct path, click on OK and the Wizard will look for more.

Once all of the drivers of the detected devices have been processed, the Wizard will indicate that the installation has finished. Click on Finish to proceed.

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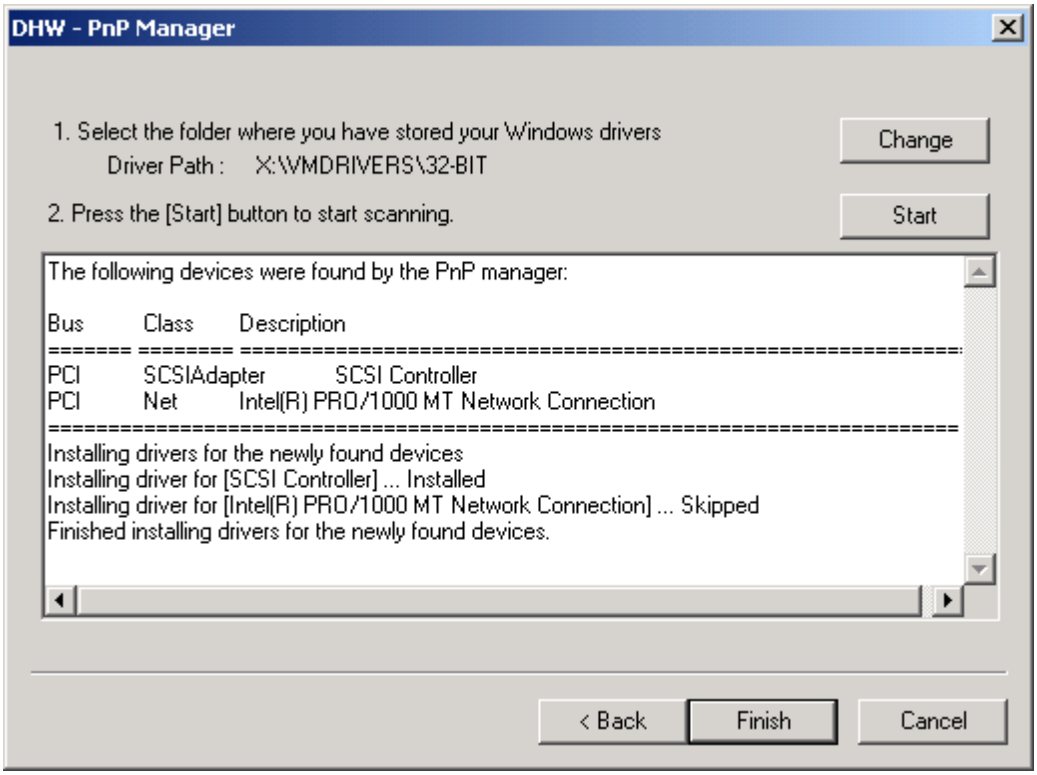
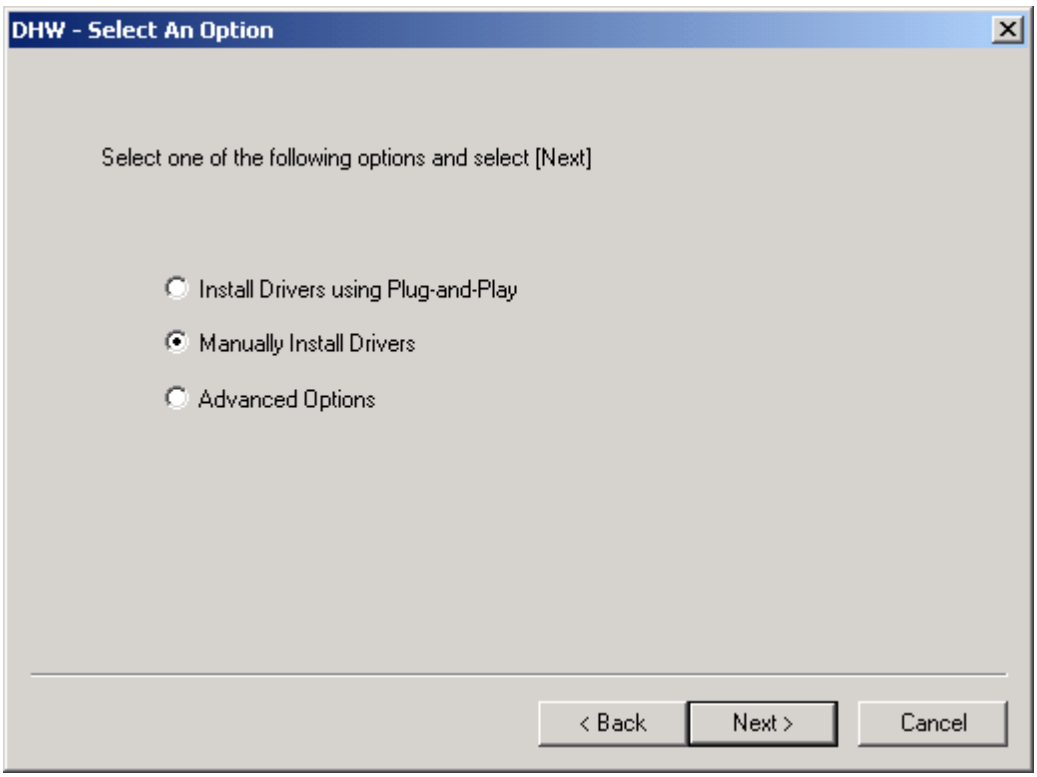
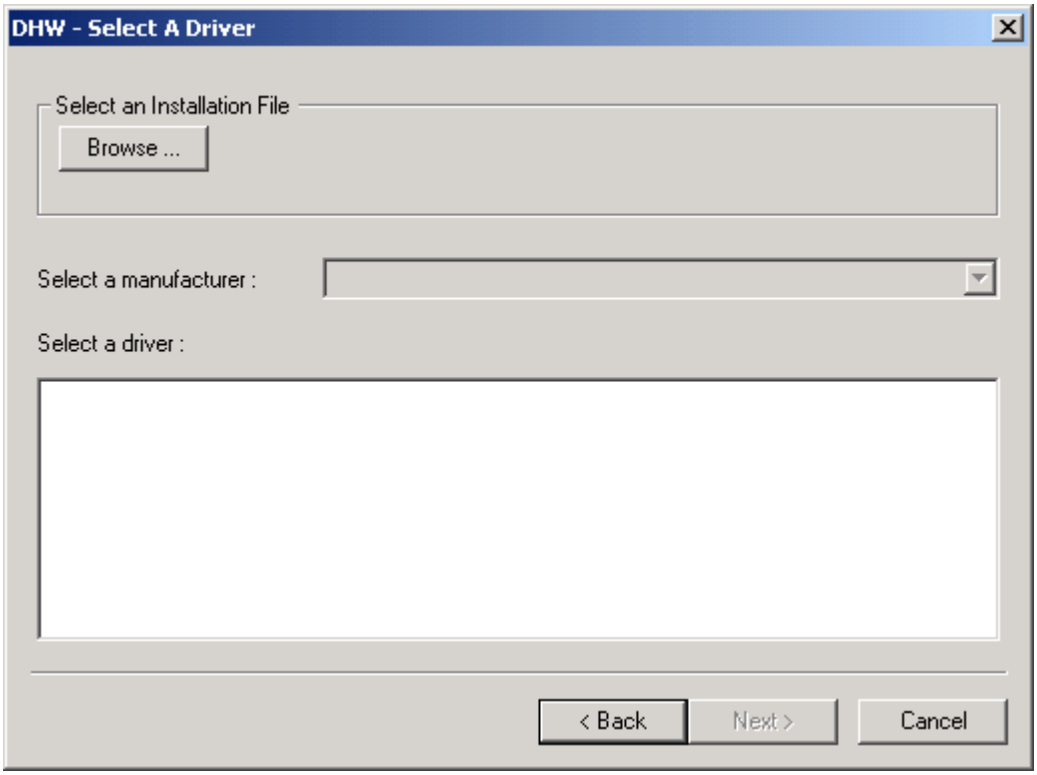

DHW - PnP Manager
1. Select the folder where you have stored your Windows drivers
Driver Path : X:\VMDRIVERS\32-BIT
Change
2. Press the [Start] button to start scanning.
Start
The following devices were found by the PnP manager:
Bus Class Description
PCI SCSIAdapter SCSI Controller
PCI Net Intel(R) PRO/1000 MT Network Connection
Installing drivers for the newly found devices
Installing driver for [SCSI Controller] ... Installed
Installing driver for [Intel(R) PRO/1000 MT Network Connection] ... Skipped
Finished installing drivers for the newly found devices.
< Back
Finish
Cancel

Manual Installation

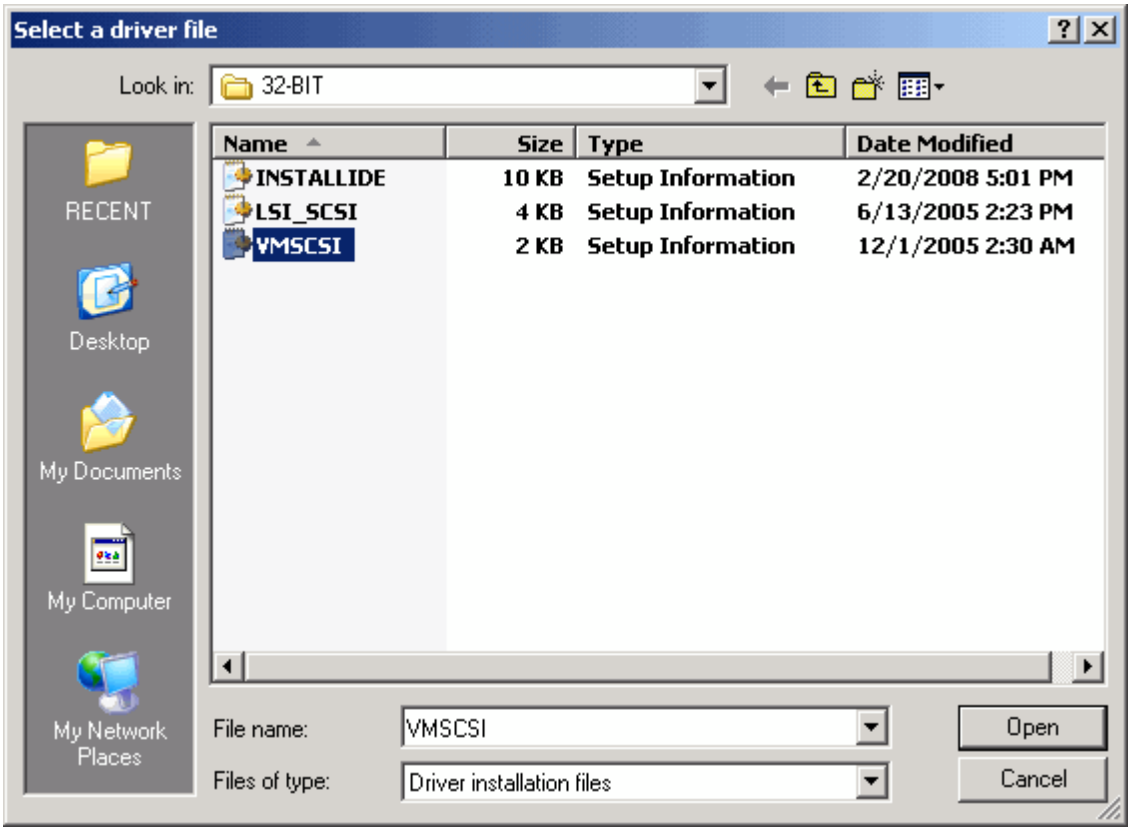
Typically, you would only manually install a driver for a CPU/HAL change. Select **'Manually Install Drivers'** from the option menu:


DHW - Select An Option
Select one of the following options and select [Next]
Install Drivers using Plug-and-Play
Manually Install Drivers
Advanced Options
< Back
Next >
Cancel

Then select Next>.



Select Browse... to locate the driver or HAL file you need by browsing to the appropriate folder that holds the .inf file. If you need to load the driver from another machine, then you can browse to a share on that machine and then to the appropriate folder.



Here we are selecting the VMware SCSI controller driver:

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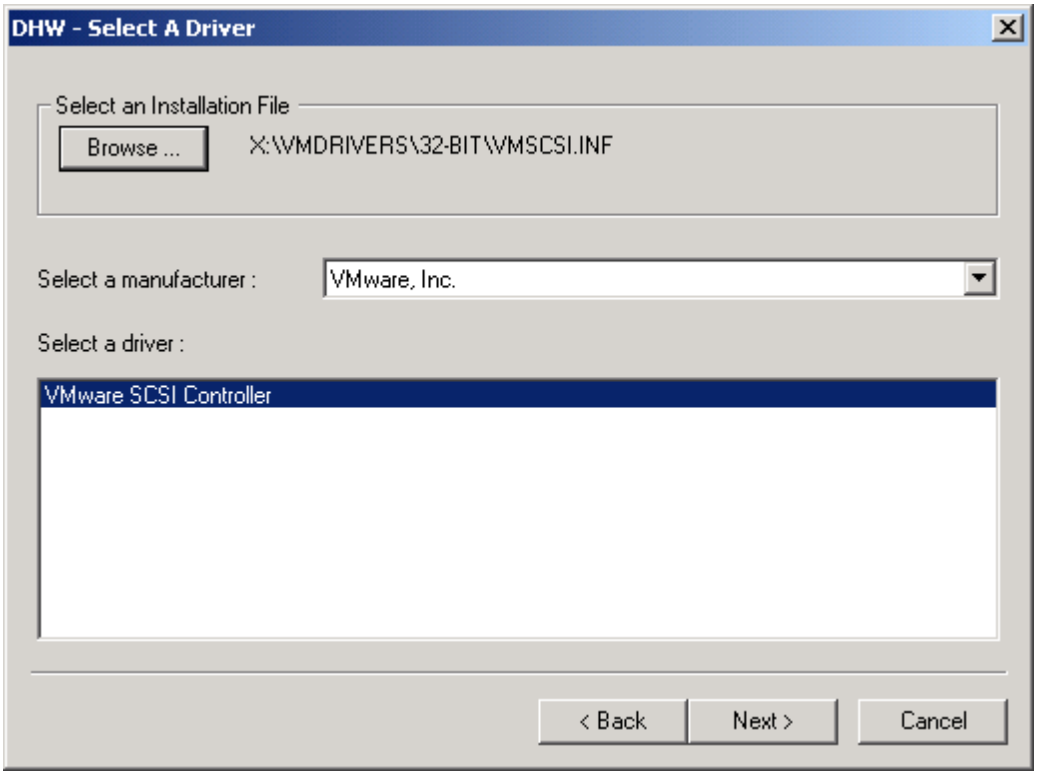
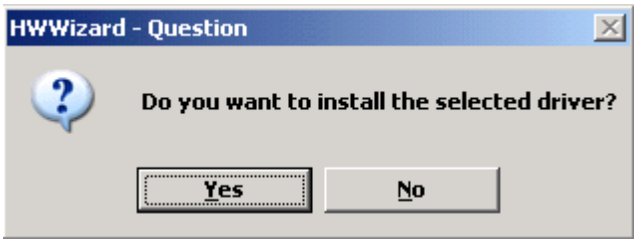
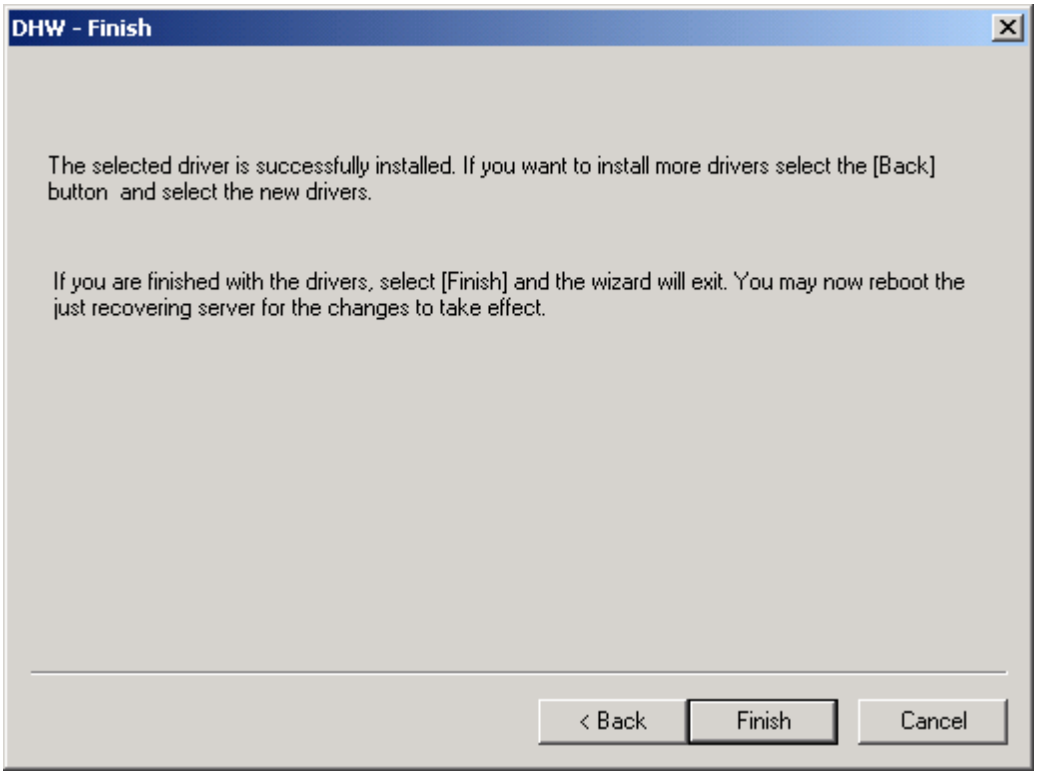


The Wizard allows you to select drivers that are grouped by manufacturer. Select the actual driver that you wish to install and click Next>.



After you confirm the selection, the Wizard determines which files need to be installed. You are given the opportunity to change the location from which they are loaded if required..

When the drivers have been installed, the Wizard allows you to go back to install another device driver or Finish the process.


DHW - Finish
The selected driver is successfully installed. If you want to install more drivers select the [Back] button and select the new drivers.
If you are finished with the drivers, select [Finish] and the wizard will exit. You may now reboot the just recovering server for the changes to take effect.
< Back
Finish
Cancel

See Also

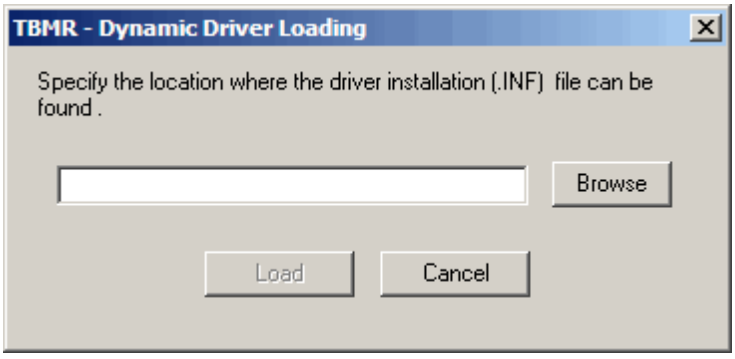
Tools
Cristie Network Configurator Tool
Load a Driver

1.2.4.3 Load a Driver

This option allows a **new mass storage** or **Network card driver** to be loaded into the WinPE 2 or WinPE 4 environment. Use this when WinPE 2 or WinPE 4 does not have a built-in driver for your hardware.

For example, if the DR environment does not show any disks to be recovered, you can inject a new mass storage device driver for the device and retry the DR Wizard.

You will be prompted for the location of the driver INF file:


TBMR - Dynamic Driver Loading
Specify the location where the driver installation (.INF) file can be found .
Browse
Load
Cancel

The INF file and other associated driver files (such as the .SYS file) can be located on a CD, USB device or a network share. The following confirmation dialogue is displayed if the driver is loaded successfully:

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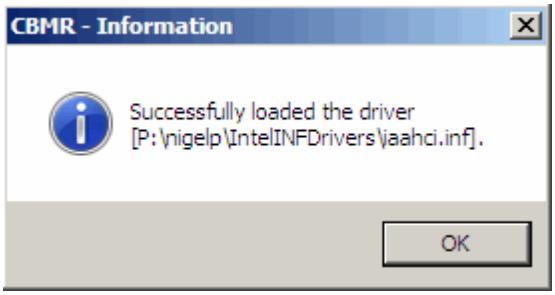
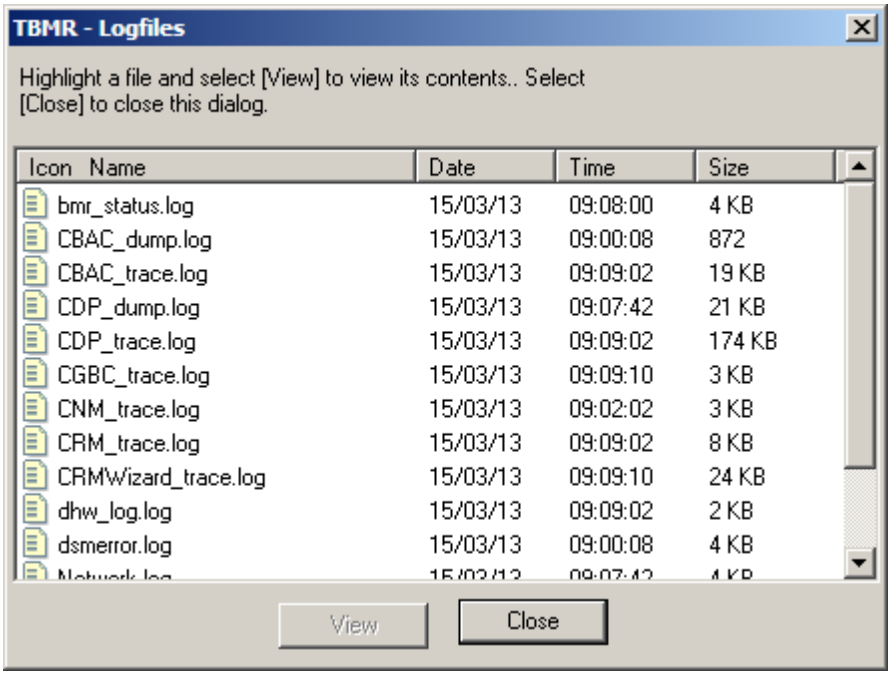


See Also

Tools
Cristie Network Configurator Tool
Dissimilar Hardware Wizard

1.2.5 Show a list of log files for viewing

This main menu option allows the log files produced during the recovery to be viewed using Notepad. Normally, viewing this information is only required to diagnose a problem with the recovery.


TBMR - Logfiles
Highlight a file and select [View] to view its contents.. Select
[Close] to close this dialog.
Icon Name
Date
Time
Size
bmr_status.log 15/03/13 09:08:00 4 KB
CBAC_dump.log 15/03/13 09:00:08 872
CBAC_trace.log 15/03/13 09:09:02 19 KB
CDP_dump.log 15/03/13 09:07:42 21 KB
CDP_trace.log 15/03/13 09:09:02 174 KB
CGBC_trace.log 15/03/13 09:09:10 3 KB
CNM_trace.log 15/03/13 09:02:02 3 KB
CRM_trace.log 15/03/13 09:09:02 8 KB
CRMWizard_trace.log 15/03/13 09:09:10 24 KB
dhw_log.log 15/03/13 09:09:02 2 KB
dsmerror.log 15/03/13 09:00:08 4 KB
View
Close

The important files are (this is not an exhaustive list):

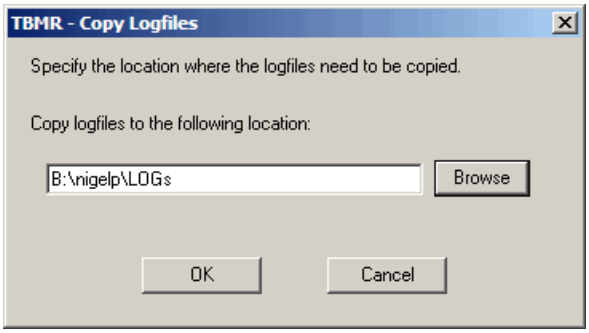
See Also

WinPE 2 or WinPE 4 Based TBMR Recovery Console
TBMR Recovery Console Main Menu
Start Automatic Recovery Wizard
Start Manual Recovery Sequence
Tools
Copy Log and Error Report Files
Close Recovery Console and Reboot

1.2.6 Copy log files to removable media or network location

Since all log and error files generated during the recovery are only transitory (ie. they are lost as soon as the Windows WinPE 2 or WinPE 4 environment exits), this option allows you to copy the files to a local device or remote network share for permanent record before booting the recovered system.

Use the **Cristie Network Configurator** utility to setup a network share first. All the files are compressed into a single ZIP file so that they can be easily sent to Cristie Support when required.



The example shows files being copied to a network share **A:**.

Note: the logs are automatically written back to the recovered system after a successful recovery. They are saved to the TBMR installation sub-folder 'Temp'.

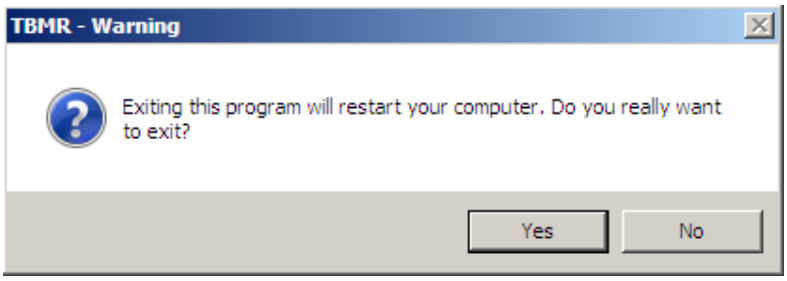
See Also

WinPE 2 or WinPE 4 Based TBMR Recovery Console
TBMR Recovery Console Main Menu
Start Automatic Recovery Wizard
Start Manual Recovery Sequence
Tools
Show Log and Error Reports
Close Recovery Console and Reboot

1.2.7 Reboot

After a successful recovery, select **Reboot** to exit the Windows WinPE 2 or WinPE 4 environment and boot the recovered system.

Press Yes on the confirmation warning to restart or No to continue running the DR console. If you choose to reboot, the recovered Windows system will boot into the OS:



See Also

WinPE 2 or WinPE 4 Based TBMR Recovery Console
TBMR Recovery Console Main Menu
Start Automatic Recovery Wizard

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Start Manual Recovery Sequence
Tools
Show Log and Error Reports
Copy Log and Error Report Files

2 Cristie Technical Support

If you have any queries or problems concerning your Bare Machine Recovery for TSM product, please contact **Cristie Technical Support**. To assist us in helping with your enquiry, make sure you have the following information available for the person dealing with your enquiry:

- TBMR Version Number
- Installed OS type and version
- Any error message information (if appropriate)
- Description of when the error occurs
- Log Files

Contact Numbers - Cristie Software (UK) Limited

Technical Support +44 (0) 1453 847 009

Toll-Free US Number 1-866-TEC-CBMR (1-866-832-2267)

Sales Enquiries +44 (0) 1453 847 000

Sales Fax +44 (0) 1453 847 001

Email cbmr@cristie.com

Web www.cristie.com

Support Hours

05:00 to 17:00 Eastern Standard Time (EST) Monday to Friday

Out-of-Hours support available to customers with a valid Support Agreement - Severity 1 issues* only

UK Bank Holidays** classed as Out-of-Hours - Severity 1 issues only.

**Severity 1 issues are defined as: a production server failure, cannot perform recovery or actual loss of data occurring.*

For details on dates of UK Bank Holidays, please see **www.cristie.com/support/

Cristie Software Limited are continually expanding their product range in line with the latest technologies. Please contact the **Cristie Sales Office** for the latest product range. Should you have specific requirements for data storage and backup devices, then Cristie's product specialists can provide expert advice for a solution to suit your needs.

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